

SEQUENCE LISTING

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<120> THAP PROTEINS AS NUCLEAR RECEPTORS FOR
CHEMOKINES AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

<130> BIOBANK.012A

<140> Unknown

<141> 2003-12-10

<150> 60/432699

<151> 2002-12-10

<150> 60/485027

<151> 2003-07-03

<160> 535

<170> FastSEO for Windows Version 4.0

<210> 1

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> THAP domain consensus

<221> UNSURE

<222> 2-5, 7-21, 23-31, 33-49, 51-52, 55-73

<223> Xaa = any of the twenty amino acids

<400> 1

[illegible]

<210> 2

<211> 81
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> THAP domain consensus

 <221> UNSURE
 <222> 3-4, 6-9, 11-21, 24, 27-35, 37-41, 43-53, 56, 59-62, 64-71,
 74-75, 80
 <223> Xaa = any of the twenty amino acids

<400> 2
 Met Pro Xaa Xaa Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Phe His Xaa Phe Pro Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Trp Xaa Xaa Xaa Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Xaa Xaa Xaa Cys Ser Xaa His Phe Xaa Xaa Xaa Xaa Phe Xaa
 50 55 60
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Lys Xaa Xaa Ala Val Pro Thr Xaa
 65 70 75 80
 Phe

<210> 3
 <211> 213
 <212> PRT
 <213> Homo sapiens

<400> 3
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1 5 10 15
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
 20 25 30
 Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
 50 55 60
 Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
 65 70 75 80
 Phe Leu Cys Thr Glu Pro His Asp Lys Lys Glu Asp Leu Leu Glu Pro
 85 90 95
 Gln Glu Gln Leu Pro Pro Pro Pro Leu Pro Pro Pro Val Ser Gln Val
 100 105 110
 Asp Ala Ala Ile Gly Leu Leu Met Pro Pro Leu Gln Thr Pro Val Asn
 115 120 125
 Leu Ser Val Phe Cys Asp His Asn Tyr Thr Val Glu Asp Thr Met His
 130 135 140
 Gln Arg Lys Arg Ile His Gln Leu Glu Gln Gln Val Glu Lys Leu Arg
 145 150 155 160
 Lys Lys Leu Lys Thr Ala Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln
 165 170 175
 Leu Glu Lys Leu Lys Glu Val Val His Phe Gln Lys Glu Lys Asp Asp
 180 185 190

Val Ser Glu Arg Gly Tyr Val Ile Leu Pro Asn Asp Tyr Phe Glu Ile
 195 200 205
 Val Glu Val Pro Ala
 210

<210> 4
 <211> 228
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Thr Thr Tyr Asn Lys
 1 5 10 15
 His Ile Asn Ile Ser Phe His Arg Phe Pro Leu Asp Pro Lys Arg Arg
 20 25 30
 Lys Glu Trp Val Arg Leu Val Arg Arg Lys Asn Phe Val Pro Gly Lys
 35 40 45
 His Thr Phe Leu Cys Ser Lys His Phe Glu Ala Ser Cys Phe Asp Leu
 50 55 60
 Thr Gly Gln Thr Arg Arg Leu Lys Met Asp Ala Val Pro Thr Ile Phe
 65 70 75 80
 Asp Phe Cys Thr His Ile Lys Ser Met Lys Leu Lys Ser Arg Asn Leu
 85 90 95
 Leu Lys Lys Asn Asn Ser Cys Ser Pro Ala Gly Pro Ser Asn Leu Lys
 100 105 110
 Ser Asn Ile Ser Ser Gln Gln Val Leu Leu Glu His Ser Tyr Ala Phe
 115 120 125
 Arg Asn Pro Met Glu Ala Lys Lys Arg Ile Ile Lys Leu Glu Lys Glu
 130 135 140
 Ile Ala Ser Leu Arg Arg Lys Met Lys Thr Cys Leu Gln Lys Glu Arg
 145 150 155 160
 Arg Ala Thr Arg Arg Trp Ile Lys Ala Thr Cys Leu Val Lys Asn Leu
 165 170 175
 Glu Ala Asn Ser Val Leu Pro Lys Gly Thr Ser Glu His Met Leu Pro
 180 185 190
 Thr Ala Leu Ser Ser Leu Pro Leu Glu Asp Phe Lys Ile Leu Glu Gln
 195 200 205
 Asp Gln Gln Asp Lys Thr Leu Leu Ser Leu Asn Leu Lys Gln Thr Lys
 210 215 220
 Ser Thr Phe Ile
 225

<210> 5
 <211> 239
 <212> PRT
 <213> Homo sapiens

<400> 5
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser
 1 5 10 15
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu
 20 25 30
 Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro
 35 40 45
 Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe

50 55 60
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr
 65 70 75 80
 Val Phe Ala Phe Gln Asp Pro Thr Gln Gln Val Arg Glu Asn Thr Asp
 85 90 95
 Pro Ala Ser Glu Arg Gly Asn Ala Ser Ser Gln Lys Glu Lys Val
 100 105 110
 Leu Pro Glu Ala Gly Ala Gly Glu Asp Ser Pro Gly Arg Asn Met Asp
 115 120 125
 Thr Ala Leu Glu Glu Leu Gln Leu Pro Pro Asn Ala Glu Gly His Val
 130 135 140
 Lys Gln Val Ser Pro Arg Arg Pro Gln Ala Thr Glu Ala Val Gly Arg
 145 150 155 160
 Pro Thr Gly Pro Ala Gly Leu Arg Arg Thr Pro Asn Lys Gln Pro Ser
 165 170 175
 Asp His Ser Tyr Ala Leu Leu Asp Leu Asp Ser Leu Lys Lys Lys Leu
 180 185 190
 Phe Leu Thr Leu Lys Glu Asn Glu Lys Leu Arg Lys Arg Leu Gln Ala
 195 200 205
 Gln Arg Leu Val Met Arg Arg Met Ser Ser Arg Leu Arg Ala Cys Lys
 210 215 220
 Gly His Gln Gly Leu Gln Ala Arg Leu Gly Pro Glu Gln Gln Ser
 225 230 235

<210> 6

<211> 577

<212> PRT

<213> Homo sapiens

<400> 6

Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys
 1 5 10 15
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser
 20 25 30
 Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr
 35 40 45
 Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser
 50 55 60
 Phe Ser Lys Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala
 65 70 75 80
 Val Pro Ser Ile Phe His Leu Thr Glu Lys Lys Arg Gly Ala Gly Gly
 85 90 95
 His Gly Arg Thr Arg Arg Lys Asp Ala Ser Lys Ala Thr Gly Gly Val
 100 105 110
 Arg Gly His Ser Ser Ala Ala Thr Gly Arg Gly Ala Ala Gly Trp Ser
 115 120 125
 Pro Ser Ser Ser Gly Asn Pro Met Ala Lys Pro Glu Ser Arg Arg Leu
 130 135 140
 Lys Gln Ala Ala Leu Gln Gly Glu Ala Thr Pro Arg Ala Ala Gln Glu
 145 150 155 160
 Ala Ala Ser Gln Glu Gln Ala Gln Gln Ala Leu Glu Arg Thr Pro Gly
 165 170 175
 Asp Gly Leu Ala Thr Met Val Ala Gly Ser Gln Gly Lys Ala Glu Ala
 180 185 190
 Ser Ala Thr Asp Ala Gly Asp Glu Ser Ala Thr Ser Ser Ile Glu Gly
 195 200 205

Gly Val Thr Asp Lys Ser Gly Ile Ser Met Asp Asp Phe Thr Pro Pro
 210 215 220
 Gly Ser Gly Ala Cys Lys Phe Ile Gly Ser Leu His Ser Tyr Ser Phe
 225 230 235 240
 Ser Ser Lys His Thr Arg Glu Arg Pro Ser Val Pro Arg Glu Pro Ile
 245 250 255
 Asp Arg Lys Arg Leu Lys Lys Asp Val Glu Pro Ser Cys Ser Gly Ser
 260 265 270
 Ser Leu Gly Pro Asp Lys Gly Leu Ala Gln Ser Pro Pro Ser Ser Ser
 275 280 285
 Leu Thr Ala Thr Pro Gln Lys Pro Ser Gln Ser Pro Ser Ala Pro Pro
 290 295 300
 Ala Asp Val Thr Pro Lys Pro Ala Thr Glu Ala Val Gln Ser Glu His
 305 310 315 320
 Ser Asp Ala Ser Pro Met Ser Ile Asn Glu Val Ile Leu Ser Ala Ser
 325 330 335
 Gly Ala Cys Lys Leu Ile Asp Ser Leu His Ser Tyr Cys Phe Ser Ser
 340 345 350
 Arg Gln Asn Lys Ser Gln Val Cys Cys Leu Arg Glu Gln Val Glu Lys
 355 360 365
 Lys Asn Gly Glu Leu Lys Ser Leu Arg Gln Arg Val Ser Arg Ser Asp
 370 375 380
 Ser Gln Val Arg Lys Leu Gln Glu Lys Leu Asp Glu Leu Arg Arg Val
 385 390 395 400
 Ser Val Pro Tyr Pro Ser Ser Leu Leu Ser Pro Ser Arg Glu Pro Pro
 405 410 415
 Lys Met Asn Pro Val Val Glu Pro Leu Ser Trp Met Leu Gly Thr Trp
 420 425 430
 Leu Ser Asp Pro Pro Gly Ala Gly Thr Tyr Pro Thr Leu Gln Pro Phe
 435 440 445
 Gln Tyr Leu Glu Glu Val His Ile Ser His Val Gly Gln Pro Met Leu
 450 455 460
 Asn Phe Ser Phe Asn Ser Phe His Pro Asp Thr Arg Lys Pro Met His
 465 470 475 480
 Arg Glu Cys Gly Phe Ile Arg Leu Lys Pro Asp Thr Asn Lys Val Ala
 485 490 495
 Phe Val Ser Ala Gln Asn Thr Gly Val Val Glu Val Glu Gly Glu
 500 505 510
 Val Asn Gly Gln Glu Leu Cys Ile Ala Ser His Ser Ile Ala Arg Ile
 515 520 525
 Ser Phe Ala Lys Glu Pro His Val Glu Gln Ile Thr Arg Lys Phe Arg
 530 535 540
 Leu Asn Ser Glu Gly Lys Leu Glu Gln Thr Val Ser Met Ala Thr Thr
 545 550 555 560
 Thr Gln Pro Met Thr Gln His Leu His Val Thr Tyr Lys Lys Val Thr
 565 570 575
 Pro

<210> 7

<211> 395

<212> PRT

<213> Homo sapiens

<400> 7

Met Pro Arg Tyr Cys Ala Ala Ile Cys Cys Lys Asn Arg Arg Gly Arg

1	5	10	15
Asn Asn Lys Asp Arg Lys Leu Ser Phe Tyr Pro Phe Pro Leu His Asp			
20	25	30	
Lys Glu Arg Leu Glu Lys Trp Leu Lys Asn Met Lys Arg Asp Ser Trp			
35	40	45	
Val Pro Ser Lys Tyr Gln Phe Leu Cys Ser Asp His Phe Thr Pro Asp			
50	55	60	
Ser Leu Asp Ile Arg Trp Gly Ile Arg Tyr Leu Lys Gln Thr Ala Val			
65	70	75	80
Pro Thr Ile Phe Ser Leu Pro Glu Asp Asn Gln Gly Lys Asp Pro Ser			
85	90	95	
Lys Lys Lys Ser Gln Lys Lys Asn Leu Glu Asp Glu Lys Glu Val Cys			
100	105	110	
Pro Lys Ala Lys Ser Glu Glu Ser Phe Val Leu Asn Glu Thr Lys Lys			
115	120	125	
Asn Ile Val Asn Thr Asp Val Pro His Gln His Pro Glu Leu Leu His			
130	135	140	
Ser Ser Ser Leu Val Lys Pro Pro Ala Pro Lys Thr Gly Ser Ile Gln			
145	150	155	160
Asn Asn Met Leu Thr Leu Asn Leu Val Lys Gln His Thr Gly Lys Pro			
165	170	175	
Glu Ser Thr Leu Glu Thr Ser Val Asn Gln Asp Thr Gly Arg Gly Gly			
180	185	190	
Phe His Thr Cys Phe Glu Asn Leu Asn Ser Thr Thr Ile Thr Leu Thr			
195	200	205	
Thr Ser Asn Ser Glu Ser Ile His Gln Ser Leu Glu Thr Gln Glu Val			
210	215	220	
Leu Glu Val Thr Thr Ser His Leu Ala Asn Pro Asn Phe Thr Ser Asn			
225	230	235	240
Ser Met Glu Ile Lys Ser Ala Gln Glu Asn Pro Phe Leu Phe Ser Thr			
245	250	255	
Ile Asn Gln Thr Val Glu Glu Leu Asn Thr Asn Lys Glu Ser Val Ile			
260	265	270	
Ala Ile Phe Val Pro Ala Glu Asn Ser Lys Pro Ser Val Asn Ser Phe			
275	280	285	
Ile Ser Ala Gln Lys Glu Thr Thr Glu Met Glu Asp Thr Asp Ile Glu			
290	295	300	
Asp Ser Leu Tyr Lys Asp Val Asp Tyr Gly Thr Glu Val Leu Gln Ile			
305	310	315	320
Glu His Ser Tyr Cys Arg Gln Asp Ile Asn Lys Glu His Leu Trp Gln			
325	330	335	
Lys Val Ser Lys Leu His Ser Lys Ile Thr Leu Leu Glu Leu Lys Glu			
340	345	350	
Gln Gln Thr Leu Gly Arg Leu Lys Ser Leu Glu Ala Leu Ile Arg Gln			
355	360	365	
Leu Lys Gln Glu Asn Trp Leu Ser Glu Glu Asn Val Lys Ile Ile Glu			
370	375	380	
Asn His Phe Thr Thr Tyr Glu Val Thr Met Ile			
385	390	395	

<210> 8

<211> 222

<212> PRT

<213> Homo sapiens

<400> 8

Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
 1 5 10 15
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu
 20 25 30
 Asn Ile Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn
 35 40 45
 Ala Ala Gly Ile Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg
 50 55 60
 His Phe Lys Lys Thr Asp Phe Asp Arg Ser Ala Pro Asn Ile Lys Leu
 65 70 75 80
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Tyr His Leu Gln
 85 90 95
 Gly Lys Arg Glu Lys Leu His Cys Arg Lys Asn Phe Thr Leu Lys Thr
 100 105 110
 Val Pro Ala Thr Asn Tyr Asn His His Leu Val Gly Ala Ser Ser Cys
 115 120 125
 Ile Glu Glu Phe Gln Ser Gln Phe Ile Phe Glu His Ser Tyr Ser Val
 130 135 140
 Met Asp Ser Pro Lys Lys Leu Lys His Lys Leu Asp His Val Ile Gly
 145 150 155 160
 Glu Leu Glu Asp Thr Lys Glu Ser Leu Arg Asn Val Leu Asp Arg Glu
 165 170 175
 Lys Arg Phe Gln Lys Ser Leu Arg Lys Thr Ile Arg Glu Leu Lys Asp
 180 185 190
 Glu Cys Leu Ile Ser Gln Glu Thr Ala Asn Arg Leu Asp Thr Phe Cys
 195 200 205
 Trp Asp Cys Cys Gln Glu Ser Ile Glu Gln Asp Tyr Ile Ser
 210 215 220

<210> 9

<211> 309

<212> PRT

<213> Homo sapiens

<400> 9

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Glu Asp Cys Phe Glu Leu Val Gly Ile Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe
 85 90 95
 Ser Lys Leu Arg Arg Thr Thr Lys Thr Lys Gly His Ser Tyr Pro Pro
 100 105 110
 Gly Pro Pro Glu Val Ser Arg Leu Arg Arg Cys Arg Lys Arg Cys Ser
 115 120 125
 Glu Gly Arg Gly Pro Thr Thr Pro Phe Ser Pro Pro Pro Ala Asp
 130 135 140
 Val Thr Cys Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Thr Leu Pro
 145 150 155 160
 Ala Ser Pro Ala Gly Arg Leu Glu Pro Gly Leu Ser Ser Pro Phe Ser

Ile Cys Gly Gly Pro Asp Ile Ala Met Val Leu Ala Gln Asp Pro Ala
 245 250 255
 Pro Ala Thr Val Asp Ala Lys Pro Glu Leu Leu Asp Thr Arg Ile Pro
 260 265 270
 Ser Ala

<210> 11
 <211> 903
 <212> PRT
 <213> Homo sapiens

<400> 11
 Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val
 1 5 10 15
 Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr
 20 25 30
 Ile Gln Arg Ser Lys Trp Ile Arg Ala Val Asn Arg Val Asp Pro Arg
 35 40 45
 Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Ile Leu Cys Ser Lys
 50 55 60
 His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu
 65 70 75 80
 Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys Ile Pro Gln Gly
 85 90 95
 Val His Leu Lys Gly Lys Ala Arg Gln Lys Ile Leu Lys Gln Pro Leu
 100 105 110
 Pro Asp Asn Ser Gln Glu Val Ala Thr Glu Asp His Asn Tyr Ser Leu
 115 120 125
 Lys Thr Pro Leu Thr Ile Gly Ala Glu Lys Leu Ala Glu Val Gln Gln
 130 135 140
 Met Leu Gln Val Ser Lys Lys Arg Leu Ile Ser Val Lys Asn Tyr Arg
 145 150 155 160
 Met Ile Lys Lys Arg Lys Gly Leu Arg Leu Ile Asp Ala Leu Val Glu
 165 170 175
 Glu Lys Leu Leu Ser Glu Glu Thr Glu Cys Leu Leu Arg Ala Gln Phe
 180 185 190
 Ser Asp Phe Lys Trp Glu Leu Tyr Asn Trp Arg Glu Thr Asp Glu Tyr
 195 200 205
 Ser Ala Glu Met Lys Gln Phe Ala Cys Thr Leu Tyr Leu Cys Ser Ser
 210 215 220
 Lys Val Tyr Asp Tyr Val Arg Lys Ile Leu Lys Leu Pro His Ser Ser
 225 230 235 240
 Ile Leu Arg Thr Trp Leu Ser Lys Cys Gln Pro Ser Pro Gly Phe Asn
 245 250 255
 Ser Asn Ile Phe Ser Phe Leu Gln Arg Arg Val Glu Asn Gly Asp Gln
 260 265 270
 Leu Tyr Gln Tyr Cys Ser Leu Leu Ile Lys Ser Ile Pro Leu Lys Gln
 275 280 285
 Gln Leu Gln Trp Asp Pro Ser Ser His Ser Leu Gln Gly Phe Met Asp
 290 295 300
 Phe Gly Leu Gly Lys Leu Asp Ala Asp Glu Thr Pro Leu Ala Ser Glu
 305 310 315 320
 Thr Val Leu Leu Met Ala Val Gly Ile Phe Gly His Trp Arg Thr Pro
 325 330 335
 Leu Gly Tyr Phe Phe Val Asn Arg Ala Ser Gly Tyr Leu Gln Ala Gln

Gln Lys Ile Leu Cys Glu Leu Ser Gly His Ile Asp Leu Phe Val Asp
 805 810 815
 Val Asn Lys His Leu Phe Asp Gly Glu Val Cys Ala Ile Asn His Phe
 820 825 830
 Val Lys Leu Leu Lys Asp Ile Ile Ile Cys Phe Leu Asn Ile Arg Ala
 835 840 845
 Lys Asn Val Ala Gln Asn Pro Leu Lys His His Ser Glu Arg Thr Asp
 850 855 860
 Met Lys Thr Leu Ser Arg Lys His Trp Ser Pro Val Gln Asp Tyr Lys
 865 870 875 880
 Cys Ser Ser Phe Ala Asn Thr Ser Ser Lys Phe Arg His Leu Leu Ser
 885 890 895
 Asn Asp Gly Tyr Pro Phe Lys
 900

<210> 12
 <211> 257
 <212> PRT
 <213> Homo sapiens

<400> 12
 Met Pro Ala Arg Cys Val Ala Ala His Cys Gly Asn Thr Thr Lys Ser
 1 5 10 15
 Gly Lys Ser Leu Phe Arg Phe Pro Lys Asp Arg Ala Val Arg Leu Leu
 20 25 30
 Trp Asp Arg Phe Val Arg Gly Cys Arg Ala Asp Trp Tyr Gly Gly Asn
 35 40 45
 Asp Arg Ser Val Ile Cys Ser Asp His Phe Ala Pro Ala Cys Phe Asp
 50 55 60
 Val Ser Ser Val Ile Gln Lys Asn Leu Arg Phe Ser Gln Arg Leu Arg
 65 70 75 80
 Leu Val Ala Gly Ala Val Pro Thr Leu His Arg Val Pro Ala Pro Ala
 85 90 95
 Pro Lys Arg Gly Glu Glu Gly Asp Gln Ala Gly Arg Leu Asp Thr Arg
 100 105 110
 Gly Glu Leu Gln Ala Ala Arg His Ser Glu Ala Ala Pro Gly Pro Val
 115 120 125
 Ser Cys Thr Arg Pro Arg Ala Gly Lys Gln Ala Ala Ala Ser Gln Ile
 130 135 140
 Thr Cys Glu Asn Glu Leu Val Gln Thr Gln Pro His Ala Asp Asn Pro
 145 150 155 160
 Ser Asn Thr Val Thr Ser Val Pro Thr His Cys Glu Glu Gly Pro Val
 165 170 175
 His Lys Ser Thr Gln Ile Ser Leu Lys Arg Pro Arg His Arg Ser Val
 180 185 190
 Gly Ile Gln Ala Lys Val Lys Ala Phe Gly Lys Arg Leu Cys Asn Ala
 195 200 205
 Thr Thr Gln Thr Glu Glu Leu Trp Ser Arg Thr Ser Ser Leu Phe Asp
 210 215 220
 Ile Tyr Ser Ser Asp Ser Glu Thr Asp Thr Asp Trp Asp Ile Lys Ser
 225 230 235 240
 Glu Gln Ser Asp Leu Ser Tyr Met Ala Val Gln Val Lys Glu Glu Thr
 245 250 255
 Cys

<210> 13
 <211> 314
 <212> PRT
 <213> Homo sapiens

<400> 13

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Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
 1           5           10           15
Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
      20           25           30
Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
      35           40           45
Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
      50           55           60
Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
65           70           75           80
Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly
      85           90           95
Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln Gln
      100          105          110
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
      115          120          125
Gln Gln Gln Gln Ser Ser Pro Ser Ala Ser Thr Ala Gln Thr Ala Gln
      130          135          140
Leu Gln Pro Asn Leu Val Ser Ala Ser Ala Ala Val Leu Leu Thr Leu
      145          150          155          160
Gln Ala Thr Val Asp Ser Ser Gln Ala Pro Gly Ser Val Gln Pro Ala
      165          170          175
Pro Ile Thr Pro Thr Gly Glu Asp Val Lys Pro Ile Asp Leu Thr Val
      180          185          190
Gln Val Glu Phe Ala Ala Ala Glu Gly Ala Ala Ala Ala Ala Ala
      195          200          205
Ser Glu Leu Gln Ala Ala Thr Ala Gly Leu Glu Ala Ala Glu Cys Pro
      210          215          220
Met Gly Pro Gln Leu Val Val Val Gly Glu Glu Gly Phe Pro Asp Thr
      225          230          235          240
Gly Ser Asp His Ser Tyr Ser Leu Ser Ser Gly Thr Thr Glu Glu Glu
      245          250          255
Leu Leu Arg Lys Leu Asn Glu Gln Arg Asp Ile Leu Ala Leu Met Glu
      260          265          270
Val Lys Met Lys Glu Met Lys Gly Ser Ile Arg His Leu Arg Leu Thr
      275          280          285
Glu Ala Lys Leu Arg Glu Glu Leu Arg Glu Lys Asp Arg Leu Leu Ala
      290          295          300
Met Ala Val Ile Arg Lys Lys His Gly Met
      305          310

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<210> 14
 <211> 761
 <212> PRT
 <213> Homo sapiens

<400> 14

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Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln
 1           5           10           15

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Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln
 20 25 30
 Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro
 35 40 45
 Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr
 50 55 60
 Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn
 65 70 75 80
 Ala Ile Pro Thr Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His
 85 90 95
 Ser Arg His Arg Lys Arg Ile Lys Glu Leu Ser Glu Asp Glu Ile Arg
 100 105 110
 Thr Leu Lys Gln Lys Lys Ile Asp Glu Thr Ser Glu Gln Glu Lys
 115 120 125
 His Lys Glu Thr Asn Asn Ser Asn Ala Gln Asn Pro Ser Glu Glu Glu
 130 135 140
 Gly Glu Gly Gln Asp Glu Asp Ile Leu Pro Leu Thr Leu Glu Glu Lys
 145 150 155 160
 Glu Asn Lys Glu Tyr Leu Lys Ser Leu Phe Glu Ile Leu Ile Leu Met
 165 170 175
 Gly Lys Gln Asn Ile Pro Leu Asp Gly His Glu Ala Asp Glu Ile Pro
 180 185 190
 Glu Gly Leu Phe Thr Pro Asp Asn Phe Gln Ala Leu Leu Glu Cys Arg
 195 200 205
 Ile Asn Ser Gly Glu Glu Val Leu Arg Lys Arg Phe Glu Thr Thr Ala
 210 215 220
 Val Asn Thr Leu Phe Cys Ser Lys Thr Gln Gln Arg Gln Met Leu Glu
 225 230 235 240
 Ile Cys Glu Ser Cys Ile Arg Glu Glu Thr Leu Arg Glu Val Arg Asp
 245 250 255
 Ser His Phe Phe Ser Ile Ile Thr Asp Asp Val Val Asp Ile Ala Gly
 260 265 270
 Glu Glu His Leu Pro Val Leu Val Arg Phe Val Asp Glu Ser His Asn
 275 280 285
 Leu Arg Glu Glu Phe Ile Gly Phe Leu Pro Tyr Glu Ala Asp Ala Glu
 290 295 300
 Ile Leu Ala Val Lys Phe His Thr Met Ile Thr Glu Lys Trp Gly Leu
 305 310 315 320
 Asn Met Glu Tyr Cys Arg Gly Gln Ala Tyr Ile Val Ser Ser Gly Phe
 325 330 335
 Ser Ser Lys Met Lys Val Val Ala Ser Arg Leu Leu Glu Lys Tyr Pro
 340 345 350
 Gln Ala Ile Tyr Thr Leu Cys Ser Ser Cys Ala Leu Asn Met Trp Leu
 355 360 365
 Ala Lys Ser Val Pro Val Met Gly Val Ser Val Ala Leu Gly Thr Ile
 370 375 380
 Glu Glu Val Cys Ser Phe Phe His Arg Ser Pro Gln Leu Leu Leu Glu
 385 390 395 400
 Leu Asp Asn Val Ile Ser Val Leu Phe Gln Asn Ser Lys Glu Arg Gly
 405 410 415
 Lys Glu Leu Lys Glu Ile Cys His Ser Gln Trp Thr Gly Arg His Asp
 420 425 430
 Ala Phe Glu Ile Leu Val Glu Leu Leu Gln Ala Leu Val Leu Cys Leu
 435 440 445
 Asp Gly Ile Asn Ser Asp Thr Asn Ile Arg Trp Asn Asn Tyr Ile Ala
 450 455 460
 Gly Arg Ala Phe Val Leu Cys Ser Ala Val Ser Asp Phe Asp Phe Ile

465 470 475 480
 Val Thr Ile Val Val Leu Lys Asn Val Leu Ser Phe Thr Arg Ala Phe
 485 490 495
 Gly Lys Asn Leu Gln Gly Gln Thr Ser Asp Val Phe Phe Ala Ala Gly
 500 505 510
 Ser Leu Thr Ala Val Leu His Ser Leu Asn Glu Val Met Glu Asn Ile
 515 520 525
 Glu Val Tyr His Glu Phe Trp Phe Glu Glu Ala Thr Asn Leu Ala Thr
 530 535 540
 Lys Leu Asp Ile Gln Met Lys Leu Pro Gly Lys Phe Arg Arg Ala His
 545 550 555 560
 Gln Gly Asn Leu Glu Ser Gln Leu Thr Ser Glu Ser Tyr Tyr Lys Glu
 565 570 575
 Thr Leu Ser Val Pro Thr Val Glu His Ile Ile Gln Glu Leu Lys Asp
 580 585 590
 Ile Phe Ser Glu Gln His Leu Lys Ala Leu Lys Cys Leu Ser Leu Val
 595 600 605
 Pro Ser Val Met Gly Gln Leu Lys Phe Asn Thr Ser Glu Glu His His
 610 615 620
 Ala Asp Met Tyr Arg Ser Asp Leu Pro Asn Pro Asp Thr Leu Ser Ala
 625 630 635 640
 Glu Leu His Cys Trp Arg Ile Lys Trp Lys His Arg Gly Lys Asp Ile
 645 650 655
 Glu Leu Pro Ser Thr Ile Tyr Glu Ala Leu His Leu Pro Asp Ile Lys
 660 665 670
 Phe Phe Pro Asn Val Tyr Ala Leu Leu Lys Val Leu Cys Ile Leu Pro
 675 680 685
 Val Met Lys Val Glu Asn Glu Arg Tyr Glu Asn Gly Arg Lys Arg Leu
 690 695 700
 Lys Ala Tyr Leu Arg Asn Thr Leu Thr Asp Gln Arg Ser Ser Asn Leu
 705 710 715 720
 Ala Leu Leu Asn Ile Asn Phe Asp Ile Lys His Asp Leu Asp Leu Met
 725 730 735
 Val Asp Thr Tyr Ile Lys Leu Tyr Thr Ser Lys Ser Glu Leu Pro Thr
 740 745 750
 Asp Asn Ser Glu Thr Val Glu Asn Thr
 755 760

<210> 15
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE
 <222> (1)...(38)
 <223> Xaa = Any Amino Acid

<400> 15
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Gln Arg Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Gln Xaa Glu

35

<210> 16
 <211> 73
 <212> PRT
 <213> Sus scrofa

<400> 16
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1 5 10 15
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
 20 25 30
 Cys Lys Lys Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
 50 55 60
 Arg Glu Cys Asn Asn Lys Leu Leu Lys
 65 70

<210> 17
 <211> 99
 <212> PRT
 <213> Sus scrofa

<400> 17
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
 1 5 10 15
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu
 20 25 30
 Lys Val Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn
 35 40 45
 Ala Ala Gly Met Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg
 50 55 60
 His Phe Lys Lys Thr Asp Phe Asp Arg Thr Thr Pro Asn Ile Lys Leu
 65 70 75 80
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Ser His Leu Thr
 85 90 95
 Gly Glu Glu

<210> 18
 <211> 103
 <212> PRT
 <213> Sus scrofa

<400> 18
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60

Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly
65 70 75 80
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe
85 90 95
Ser Lys Leu Arg Arg Thr Ala
100

<210> 19
<211> 99
<212> PRT
<213> Sus scrofa

<400> 19
Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val
1 5 10 15
Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr
20 25 30
Ile Gln Arg Ser Gln Trp Ile Arg Ala Val Asn Arg Met Asp Pro Arg
35 40 45
Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Met Leu Cys Ser Lys
50 55 60
His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu
65 70 75 80
Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys Val Leu Gln Gly
85 90 95
Ala His Leu

<210> 20
<211> 92
<212> PRT
<213> Bos taurus

<400> 20
Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Asn
1 5 10 15
Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu
20 25 30
Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asp Phe Glu Pro
35 40 45
Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe
50 55 60
Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr
65 70 75 80
Val Phe Ala Phe Gln Gly Pro Pro Gln Leu Val Arg
85 90

<210> 21
<211> 75
<212> PRT
<213> Bos taurus

<400> 21
Arg Leu Pro Lys Lys Asp Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn

1 5 10 15
 Cys Gln Arg Leu Asp Pro Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser
 20 25 30
 Glu Tyr Ile Tyr Phe Cys Ser Lys His Phe Glu Glu Asn Cys Phe Glu
 35 40 45
 Leu Val Gly Ile Ser Gly Tyr His Arg Leu Lys Glu Gly Ala Val Pro
 50 55 60
 Thr Ile Phe Glu Ser Phe Ser Lys Leu Arg Arg
 65 70 75

<210> 22
 <211> 91
 <212> PRT
 <213> Mus musculus

<400> 22
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1 5 10 15
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
 20 25 30
 Cys Lys Gln Trp Glu Ala Ala Val Lys Arg Lys Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
 50 55 60
 Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
 65 70 75 80
 Phe Leu Tyr Ile Glu Pro His Glu Lys Lys Glu
 85 90

<210> 23
 <211> 90
 <212> PRT
 <213> Mus musculus

<400> 23
 Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Ala Thr Tyr Asn Lys
 1 5 10 15
 His Ile Asn Ile Ser Phe His Arg Phe Pro Leu Asp Pro Lys Arg Arg
 20 25 30
 Lys Glu Trp Val Arg Leu Val Arg Arg Lys Asn Phe Val Pro Gly Lys
 35 40 45
 His Thr Phe Leu Cys Ser Lys His Phe Glu Ala Ser Cys Phe Asp Leu
 50 55 60
 Thr Gly Gln Thr Arg Arg Leu Lys Met Asp Ala Val Pro Thr Ile Phe
 65 70 75 80
 Asp Phe Cys Thr His Ile Lys Ser Leu Lys
 85 90

<210> 24
 <211> 92
 <212> PRT
 <213> Mus musculus

<400> 24

Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser
 1 5 10 15
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu
 20 25 30
 Leu Leu Arg Glu Trp Val Leu Asn Ile Gly Arg Ala Asp Phe Lys Pro
 35 40 45
 Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe
 50 55 60
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr
 65 70 75 80
 Val Phe Ala Phe Gln Asn Pro Thr Glu Val Cys Pro
 85 90

<210> 25
 <211> 95
 <212> PRT
 <213> Mus musculus

<400> 25
 Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys
 1 5 10 15
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser
 20 25 30
 Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr
 35 40 45
 Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser
 50 55 60
 Phe Ser Lys Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala
 65 70 75 80
 Val Pro Ser Ile Phe His Leu Ser Glu Lys Lys Arg Gly Ala Gly
 85 90 95

<210> 26
 <211> 52
 <212> PRT
 <213> Mus musculus

<400> 26
 Ile Leu Gln Ala Phe Gly Ser Leu Lys Lys Gly Asp Val Leu Cys Ser
 1 5 10 15
 Arg His Phe Lys Lys Thr Asp Phe Asp Arg Ser Thr Leu Asn Thr Lys
 20 25 30
 Leu Lys Ala Gly Ala Ile Pro Ser Ile Phe Glu Cys Pro Tyr His Leu
 35 40 45
 Gln Glu Lys Arg
 50

<210> 27
 <211> 103
 <212> PRT
 <213> Mus musculus

<400> 27
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg

1	5	10	15
Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp			
20	25	30	
Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro			
35	40	45	
Ser Gly Gln Gly Leu Trp Asp Pro Thr Ser Glu Tyr Ile Tyr Phe Cys			
50	55	60	
Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly			
65	70	75	80
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe			
85	90	95	
Ser Lys Leu Arg Arg Thr Ala			
100			

<210> 28
 <211> 90
 <212> PRT
 <213> Mus musculus

<400> 28
Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
1 5 10 15
Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
20 25 30
Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
35 40 45
Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
50 55 60
Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
65 70 75 80
Pro Leu Arg Gly Val Asn Glu Arg Lys Val
85 90

<210> 29
 <211> 96
 <212> PRT
 <213> Mus musculus

<400> 29
Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln
1 5 10 15
Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln
20 25 30
Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro
35 40 45
Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr
50 55 60
Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn
65 70 75 80
Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His
85 90 95

<210> 30
 <211> 24

<212> PRT
<213> Rattus norvegicus

<400> 30
Met Pro Thr Asn Cys Ala Ala Ala Gly Cys Ala Ala Thr Tyr Asn Lys
1 5 10 15
His Ile Asn Ile Ser Phe His Arg
20

<210> 31
<211> 85
<212> PRT
<213> Rattus norvegicus

<400> 31
Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys Gln Leu Thr Phe
1 5 10 15
His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Arg Glu Trp Val Leu
20 25 30
Asn Ile Gly Arg Ala Asp Phe Lys Pro Lys Gln His Thr Val Ile Cys
35 40 45
Ser Glu His Phe Arg Pro Glu Cys Phe Ser Ala Phe Gly Asn Arg Lys
50 55 60
Asn Leu Lys His Asn Ala Val Pro Thr Val Phe Ala Phe Gln Asn Pro
65 70 75 80
Ala Gln Val Cys Pro
85

<210> 32
<211> 70
<212> PRT
<213> Rattus norvegicus

<400> 32
Arg Phe Pro Leu Lys Asp Ser Lys Arg Leu Ile Gln Trp Leu Lys Ala
1 5 10 15
Val Gln Arg Asp Asn Trp Thr Pro Thr Lys Tyr Ser Phe Leu Cys Ser
20 25 30
Glu His Phe Thr Lys Asp Ser Phe Ser Lys Arg Leu Glu Asp Gln His
35 40 45
Arg Leu Leu Lys Pro Thr Ala Val Pro Ser Ile Phe His Leu Ser Glu
50 55 60
Lys Lys Arg Gly Ala Gly
65 70

<210> 33
<211> 55
<212> PRT
<213> Rattus norvegicus

<400> 33
Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
1 5 10 15
Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu

Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln
20 25 30
Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro
35 40 45
Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr
50 55 60
Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn
65 70 75 80
Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His
85 90 95

<210> 37
<211> 94
<212> PRT
<213> Gallus gallus

<400> 37
Met Val Ile Cys Cys Ala Ala Ala Asn Cys Ser Asn Arg Gln Gly Lys
1 5 10 15
Ala Leu Arg Gly Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser
20 25 30
Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr
35 40 45
Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser
50 55 60
Phe Ser Arg Arg Leu Glu Asp Gln His Arg Leu Lys Pro Thr Ala
65 70 75 80
Val Pro Thr Ile Phe Gln Leu Ala Glu Lys Lys Arg Asp Asn
85 90

<210> 38
<211> 94
<212> PRT
<213> Gallus gallus

<400> 38
Met Pro Arg Tyr Cys Ala Ala Ser Tyr Cys Lys Asn Arg Gly Gly Gln
1 5 10 15
Ser Ala Arg Asp Gln Arg Lys Leu Ser Phe Tyr Pro Phe Pro Leu His
20 25 30
Asp Lys Glu Arg Leu Glu Lys Trp Leu Arg Asn Met Lys Arg Asp Ala
35 40 45
Trp Thr Pro Ser Lys His Gln Leu Leu Cys Ser Asp His Phe Thr Pro
50 55 60
Asp Ser Leu Asp Val Arg Trp Gly Ile Arg Tyr Leu Lys His Thr Ala
65 70 75 80
Val Pro Thr Ile Phe Ser Ser Pro Asp Asp Glu Glu Lys Gly
85 90

<210> 39
<211> 102
<212> PRT
<213> Gallus gallus

<400> 39

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
1 5 10 15
Glu Thr Arg Ser Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
20 25 30
Asn Pro Arg Arg Ala Leu Trp Leu Glu Asn Ser Arg Arg Asp Ala
35 40 45
Ser Gly Glu Gly Arg Trp Asp Pro Ala Ser Lys Tyr Ile Tyr Phe Cys
50 55 60
Ser Gln His Phe Glu Lys Ser Cys Phe Glu Ile Val Gly Phe Ser Gly
65 70 75 80
Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Val Phe Glu Ser Thr
85 90 95
Ser Pro Arg Pro Pro Arg
100

<210> 40

<211> 27

<212> PRT

<213> Gallus gallus

<400> 40

Met Thr Arg Ser Cys Ser Ala Leu Gly Cys Ser Ala Arg Asp Asn Gly
1 5 10 15
Arg Ser Arg Glu Arg Gly Ile Ser Phe His Gln
20 25

<210> 41

<211> 90

<212> PRT

<213> Xenopus laevis

<400> 41

Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
1 5 10 15
Asp Arg Pro Ile Ser Phe His Lys Phe Pro Leu Lys Arg Pro Leu Leu
20 25 30
Cys Lys Lys Trp Glu Ala Ala Val Arg Arg Ala Asp Phe Lys Pro Thr
35 40 45
Lys Tyr Ser Ser Ile Cys Ser Asp His Phe Thr Ala Asp Cys Phe Lys
50 55 60
Arg Glu Cys Asn Asn Lys Leu Leu Lys Asp Asn Ala Val Pro Thr Val
65 70 75 80
Phe Ala Leu Ala Glu Ile Lys Lys Lys Met
85 90

<210> 42

<211> 103

<212> PRT

<213> Xenopus laevis

<400> 42

Met Pro Arg His Cys Ser Ala Leu Gly Cys Thr Thr Arg Asp Ser Arg
1 5 10 15

Gln Thr Arg Asn Asn Asn Ile Ser Phe His Arg Leu Pro Arg Lys Asp
 20 25 30
 Asp Pro Arg Arg Asn Leu Trp Ile Ala Asn Cys Gln Arg Thr Asp Pro
 35 40 45
 Ser Gly Lys Gly Leu Trp Asp Pro Ser Ser Asp Tyr Val Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Lys Ser Cys Phe Glu Val Val Gly Thr Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Glu Asp Ala Val Pro Thr Leu Phe Leu Ser Ser
 85 90 95
 Ala Lys Leu Arg Arg Ala Ala
 100

<210> 43
 <211> 90
 <212> PRT
 <213> *Xenopus laevi*

<400> 43
 Met Val Arg Ser Cys Ser Ala Ala Asn Cys Val Asn Arg Gln Thr Ala
 1 5 10 15
 Leu Asn Lys Arg Lys Gly Ile Thr Phe His Arg Phe Pro Lys Glu Gln
 20 25 30
 Ala Arg Arg Gln Leu Trp Ile Thr Ala Val Thr His Ser His Ala Ala
 35 40 45
 Val Gly Thr Asp Trp Thr Pro Ser Ile His Ser Ser Leu Cys Ser Gln
 50 55 60
 His Phe Asn Asn Thr Gln Phe Asp Arg Thr Gly Gln Thr Val Arg Leu
 65 70 75 80
 Arg Asp Ser Ala Val Pro Thr Val Phe Ser
 85 90

<210> 44
 <211> 99
 <212> PRT
 <213> *Xenopus laevi*

<400> 44
 Met Pro Val Ser Cys Ala Ala Ser Gly Cys Lys Ser Arg Tyr Thr Met
 1 5 10 15
 Asp Ala Arg Glu Lys Gly Ile Thr Phe His Arg Phe Pro Arg Ser Asn
 20 25 30
 Pro Thr Leu Leu Glu Lys Trp Arg Leu Ala Met Arg Arg Ser Thr Arg
 35 40 45
 Asn Gly Glu Leu Trp Met Pro Ser Arg Tyr Gln Arg Leu Cys Ser Leu
 50 55 60
 His Phe Lys Gln Cys Cys Phe Asp Thr Thr Gly Gln Thr Lys Arg Leu
 65 70 75 80
 Arg Glu Asp Val Ile Pro Thr Ile Phe Asp Phe Pro Glu Glu Thr His
 85 90 95
 Val Ile Phe

<210> 45

<211> 90
 <212> PRT
 <213> *Xenopus laevis*

<400> 45
 Met Pro Ala Cys Ala Ile Asn Cys Thr Ser Arg Gln Thr Arg Gly
 1 5 10 15
 Cys Gly Lys Ser Phe His Lys Phe Pro His Gly Arg Pro Glu Val Leu
 20 25 30
 Lys Lys Trp Val Met Asn Met Arg Arg Asp Lys Phe Lys Pro Ser Ser
 35 40 45
 Lys Ala Val Leu Cys Ser Asp His Phe Glu Glu Phe Cys Phe Asp Arg
 50 55 60
 Thr Gly Gln Thr Ile Arg Leu Arg Thr Asp Ala Val Pro Thr Val Phe
 65 70 75 80
 Thr Phe Pro Gly Lys Met Lys Lys Asp Arg
 85 90

<210> 46
 <211> 105
 <212> PRT
 <213> *Xenopus laevis*

<400> 46
 Met Pro His Cys Val Val Ser Asn Cys Val His Phe Asn Tyr Lys Lys
 1 5 10 15
 Ser Asn Leu His Gly Val Ala Leu His Pro Phe Pro Asn Asp Leu Ser
 20 25 30
 Arg Ile Lys Leu Trp Leu Gln Gln Ile Gly Leu Thr Thr Asp Glu Ile
 35 40 45
 Asp Tyr Leu Ala Gln Lys Val Val Glu Gly Lys Arg Lys Lys Thr Asp
 50 55 60
 Ser His Arg Met Cys Ser Ala His Phe Thr Pro Asn Cys Tyr Ile Val
 65 70 75 80
 Gln Asp Ala Lys Leu Val Leu Arg Ser Asp Ala Ile Pro Thr Met Phe
 85 90 95
 Pro Gly Leu Ser Ser Ser Thr Thr Asn
 100 105

<210> 47
 <211> 104
 <212> PRT
 <213> *Xenopus laevis*

<400> 47
 Met Pro Lys Cys Ile Val Thr Lys Cys Pro His Lys Thr Gly Gln Lys
 1 5 10 15
 Glu Leu Tyr Pro Ser Val Ile Leu His Pro Phe Pro Gly Asn Ile Glu
 20 25 30
 Lys Ile Lys Gln Trp Leu Leu Gln Thr Gly Glu Asp Tyr Gly Asp Tyr
 35 40 45
 Glu Val Phe Ala Glu Lys Val Leu Glu Ala Lys Lys Thr Asp Ala Tyr
 50 55 60
 Arg Ile Cys Ser Arg His Phe Ala Glu Asp Gln Tyr Val Lys Arg Gly
 65 70 75 80

Pro Arg Lys Leu Leu Ser Lys Asp Ala Val Pro Thr Ile Phe Ser Asn
 85 90 95
 Leu His Pro Leu Ile Gln Leu His
 100

<210> 48
 <211> 102
 <212> PRT
 <213> *Xenopus laevi*

<400> 48
 Met Pro Arg Cys Val Val Lys Asn Cys Pro His Trp Thr Gly Lys Lys
 1 5 10 15
 Gly Ser Gln Val Ile Leu His Gly Phe Pro Asn Asn Ser Arg Leu Ile
 20 25 30
 Lys Leu Trp Leu Ser Gln Thr Lys Gln Asp Phe Gly Asp Val Glu Asp
 35 40 45
 Phe Thr Gln Lys Ile Leu Glu Gly Lys Lys Asn Asp Leu Tyr Arg Leu
 50 55 60
 Cys Ser Lys His Phe Thr Asn Asp Ser Tyr Glu Ile Arg Gly Thr Lys
 65 70 75 80
 Arg Phe Leu Lys Tyr Gly Ala Val Pro Thr Val Phe Glu Asp Thr Pro
 85 90 95
 Pro Leu Lys Arg Arg Lys
 100

<210> 49
 <211> 104
 <212> PRT
 <213> *Xenopus laevi*

<400> 49
 Met Pro Asn Cys Ile Val Lys Asp Cys Arg His Lys Ser Gly Gln Lys
 1 5 10 15
 Ile Gln Asn Pro Asp Val Val Leu His Pro Phe Pro Asn Asn Ile Asn
 20 25 30
 Met Ile Lys Asn Trp Leu Leu Gln Thr Gly Gln Asp Phe Gly Asp Ile
 35 40 45
 Asp Val Leu Ala Asp Lys Ile Leu Lys Gly Lys Lys Thr Ala Asn Phe
 50 55 60
 Arg Met Cys Ser Cys His Phe Thr Arg Asp Ser Tyr Met Ala Arg Gly
 65 70 75 80
 Ser Lys Thr Thr Leu Lys Pro Asn Ala Ile Pro Thr Ile Phe Pro Val
 85 90 95
 Ile Leu Pro Thr Thr Val Pro Ser
 100

<210> 50
 <211> 99
 <212> PRT
 <213> *Xenopus laevi*

<400> 50
 Met Pro Lys Cys Phe Val Gln Ser Cys Pro His Tyr Thr Gly Arg Asn

1	5	10	15
Gly Lys Pro Asp Asn Val Ile Leu His Thr Phe Pro Arg Cys Lys Lys			
20	25	30	
Gln Val Gln Val Trp Leu Ser Arg Thr Gly Glu Arg Tyr Glu Asn Met			
35	40	45	
Ala Glu Phe Val Thr Tyr Ile Thr Gln Arg Cys Ser Asn Phe Arg Met			
50	55	60	
Cys Ser Glu His Phe Thr Asp Asp Cys Tyr Ile Thr Val Glu Gly Lys			
65	70	75	80
Arg Arg Leu Met Glu Asn Ser Ala Pro Thr Ile Phe Lys Thr Thr Phe			
85	90	95	
Arg Gln Asn			

<210> 51
 <211> 104
 <212> PRT
 <213> *Xenopus laevis*

<400> 51
Met Thr Lys Cys Ile Val Lys Gly Cys Arg His Thr Thr Gly Gln Lys
1 5 10 15
Leu Lys Phe Pro His Ile Val Met His Ala Phe Pro Ser Asn Leu Lys
20 25 30
Met Ile Lys Val Trp Leu Lys Gln Thr Gly Gln Tyr Gly Asn Asn Leu
35 40 45
Glu Glu Met Ala Leu Lys Val Leu Gly Gly Lys Lys Ser Asp Ser Tyr
50 55 60
Arg Leu Cys Ser Ala His Phe Thr Val Asp Ser Tyr Ala Leu Arg Arg
65 70 75 80
Ser Lys Asn Met Leu Lys Lys Asp Ala Phe Pro Thr Leu Phe Gly Gln
85 90 95
Asn Gln Ile Asn Ala Ala Asn Val
100

<210> 52
 <211> 84
 <212> PRT
 <213> *Xenopus laevis*

<400> 52
Met Pro Lys Cys Ile Val Ile His Cys Pro His Ser Cys Ser Lys Lys
1 5 10 15
Val Thr Lys Asn Thr Gly Val Val Met His Thr Phe Pro Phe Asn Leu
20 25 30
Asp Arg Ile Lys Asn Trp Leu Leu Ser Ile Asp Gln Asn Phe Gly Asn
35 40 45
Ile Asp Thr Leu Ala Asn Arg Ile Leu Glu Glu Lys Lys Lys His Ser
50 55 60
Asp Leu Tyr Arg Leu Cys Ser Glu His Phe Thr Pro Gln Cys Tyr Ile
65 70 75 80
Ser Thr Gly Glu

<210> 53
 <211> 104
 <212> PRT
 <213> *Xenopus laevis*

<400> 53
 Met Pro Ser Cys Ile Val Lys Gly Cys Pro His Arg Thr Gly Gln Lys
 1 5 10 15
 Asp Lys Phe Pro Asn Val Thr Leu His Asn Phe Pro Lys Thr Ile Pro
 20 25 30
 Lys Ile Lys Asn Trp Leu Trp Gln Thr Gly Gln Tyr Gly Glu Asp Ser
 35 40 45
 Asp Ala Ile Ala Glu Glu Ile Leu Gln Gly Leu Lys Thr Cys Arg His
 50 55 60
 Arg Met Cys Ser Met His Phe Ser Glu Asn Cys Phe Ile Thr Leu Gly
 65 70 75 80
 Ser Lys Arg Val Leu Thr Arg Asn Ala Val Pro Thr Ile Phe Lys Pro
 85 90 95
 Gln Thr Thr Pro Ala Ile Leu Ala
 100

<210> 54
 <211> 104
 <212> PRT
 <213> *Xenopus laevis*

<400> 54
 Met Pro Lys Cys Ile Leu Asn Gly Cys Pro Tyr Arg Thr Gly Gln Lys
 1 5 10 15
 Leu Lys Phe Pro Asp Ile Val Leu His Pro Phe Pro Lys Ser Met Glu
 20 25 30
 Met Ile Arg Asn Trp Leu Phe Gln Thr Gly Gln His Ala Glu Asp Val
 35 40 45
 Glu Ser Leu Ser Gln Arg Ile Tyr Gln Gly Leu Lys Thr Ser Asn Phe
 50 55 60
 Arg Met Cys Ser Lys His Phe Thr Gln Asp Cys Tyr Met Gln Val Gly
 65 70 75 80
 Ser Arg Lys Cys Leu Lys Pro Asn Ala Val Pro Thr Val Phe Glu Ser
 85 90 95
 Tyr Asn Val Pro Val Thr Thr Phe
 100

<210> 55
 <211> 105
 <212> PRT
 <213> *Xenopus laevis*

<400> 55
 Asn Asn Ala Ser Cys Ile Val Arg Gly Cys His His Ser Thr Ala Arg
 1 5 10 15
 Lys Cys Leu Ser Pro Gly Ile Ala Leu His Gly Phe Pro Asn Asn Leu
 20 25 30
 Ser Arg Ile Lys Gln Trp Leu Val Asn Ile Gly Gln Asn Val Gly Asp
 35 40 45
 Ile Asp Asp Phe Ala Gln Lys Val Leu Asp Gly Lys Lys Gln Asn Ser

50 55 60
 Tyr Arg Ile Cys Ser Ala His Phe Ser Ser Asp Cys Phe Val Gln Phe
 65 70 75 80
 Gly Tyr Ser Lys Gly Leu Lys Ala Asp Ala Val Pro Thr Ile Phe Ala
 85 90 95
 Trp Asn Thr Pro Glu Ser Arg Gly Arg
 100 105

<210> 56
 <211> 107
 <212> PRT
 <213> Xenopus laevi

<400> 56
 Met Pro Ser Cys Ile Val Lys Gly Cys Arg His Lys Ser Gly Gln Lys
 1 5 10 15
 Val Leu Tyr Pro Asp Val Val Leu His Ser Phe Pro Asn Asn Ile His
 20 25 30
 Met Ile Lys Asn Trp Leu Leu Gln Thr Gly Gln Val Phe Gly Asp Ile
 35 40 45
 Asp Ala Phe Ala Glu Lys Val Leu Lys Gly Asn Lys Thr Ser Ala Phe
 50 55 60
 Arg Met Cys Ser Arg His Phe Thr Arg Asp Ser Tyr Met Ala Lys Gly
 65 70 75 80
 Ser Lys Ile Thr Leu Lys Pro Asn Ala Val Pro Thr Ile Phe Asn Thr
 85 90 95
 Leu Pro Pro Ala Ala Val Pro Ser Leu Met
 100 105

<210> 57
 <211> 91
 <212> PRT
 <213> Danio rerio

<400> 57
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Asn Asn Arg Tyr Gln Lys
 1 5 10 15
 Asp Arg Ile Ile Ser Phe His Lys Phe Pro Leu Ala Arg Pro Glu Val
 20 25 30
 Cys Val Gln Trp Val Ser Ala Met Ser Arg Arg Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Asn Ile Cys Ser Gln His Phe Thr Ser Asp Cys Phe Lys
 50 55 60
 Gln Glu Cys Asn Asn Arg Val Leu Lys Asp Asn Ala Val Pro Ser Leu
 65 70 75 80
 Phe Thr Leu Gln Thr Gln Asp Pro Phe Ser Ala
 85 90

<210> 58
 <211> 103
 <212> PRT
 <213> Danio rerio

<400> 58

Met Pro Arg His Cys Ser Ala Val Gly Cys Lys Ser Arg Asp Thr Lys
 1 5 10 15
 Asp Val Arg Lys Ser Gly Ile Thr Phe His Arg Leu Pro Lys Lys Gly
 20 25 30
 Asn Pro Arg Arg Thr Thr Trp Ile Ile Asn Ser Arg Arg Lys Gly Pro
 35 40 45
 Glu Gly Lys Gly Gln Trp Asp Pro Gln Ser Gly Phe Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Thr Pro Asp Ser Phe Glu Leu Ser Gly Val Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Asp Asp Ala Ile Pro Thr Val Phe Glu Ile Glu
 85 90 95
 Pro His Lys Lys Gly Thr Ala
 100

<210> 59
 <211> 90
 <212> PRT
 <213> Danio rerio

<400> 59
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
 1 5 10 15
 Arg Asp Arg Asp Leu Arg Phe Tyr Thr Phe Pro Lys Asp Pro Thr Gln
 20 25 30
 Arg Glu Ile Trp Leu Lys Asn Ile Ser Arg Ala Gly Val Ser Gly Cys
 35 40 45
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Val Cys Ser Val His
 50 55 60
 Phe Pro Gly Gly Arg Lys Thr Tyr Thr Ile Arg Val Pro Thr Leu Phe
 65 70 75 80
 Pro Leu Arg Gly Val Asn Glu Arg Arg Ser
 85 90

<210> 60
 <211> 96
 <212> PRT
 <213> Danio rerio

<400> 60
 Met Pro Asn Phe Cys Ala Ala Leu Asn Cys Ser Arg Asn Ser Thr His
 1 5 10 15
 Ser Val Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Glu Arg Cys Lys
 20 25 30
 Lys Trp Val Glu Asn Cys Ser Arg Ser Asp Leu Lys Asp Lys Thr Pro
 35 40 45
 Asp His Leu Asn Lys Tyr His Arg Leu Cys Ala Arg His Phe Glu Pro
 50 55 60
 Asn Leu Ile Thr Lys Thr Ser Pro Phe Arg Thr Val Leu Lys Asp Ser
 65 70 75 80
 Ala Val Pro Thr Ile Phe Asp Asn Pro Phe Lys Arg Ser Asn Asn Glu
 85 90 95

<210> 61

<211> 99
 <212> PRT
 <213> Danio rerio

<400> 61
 Met Pro Tyr Lys Cys Val Ala Tyr Gly Cys Gly Lys Ile Ser Gly Gln
 1 5 10 15
 Asn Val Ser Met Phe Arg Phe Pro Lys Asp Pro Glu Glu Phe Ser Lys
 20 25 30
 Trp Gln Arg Gln Val Gln Lys Thr Arg Arg Asn Trp Leu Ala Asn Thr
 35 40 45
 Tyr Ser His Leu Cys Asn Glu His Phe Thr Lys Asp Cys Phe Glu Pro
 50 55 60
 Lys Thr Tyr Val Thr Ala Lys Ala Ser Gly Phe Lys Arg Leu Lys Leu
 65 70 75 80
 Lys Asp Gly Ala Val Pro Thr Val Phe Ile Arg Arg Arg Cys Arg Lys
 85 90 95
 Cys Gly Gly

<210> 62
 <211> 90
 <212> PRT
 <213> Danio rerio

<400> 62
 Met Gly Gly Cys Ser Ala Pro Asn Cys Ser Asn Ser Thr Thr Ile Gly
 1 5 10 15
 Lys Gln Leu Phe Arg Phe Pro Lys Asp Pro Val Arg Met Arg Lys Trp
 20 25 30
 Leu Val Asn Cys Arg Arg Asp Phe Val Pro Thr Pro Cys Ser Arg Leu
 35 40 45
 Cys Gln Asp His Phe Glu Glu Ser Gln Phe Glu Glu Ile Ala Arg Ser
 50 55 60
 Pro Ala Gly Gly Arg Lys Leu Lys Pro Asn Ala Ile Pro Thr Leu Phe
 65 70 75 80
 Asn Val Pro Asp Pro Pro Ser Pro Val Thr
 85 90

<210> 63
 <211> 105
 <212> PRT
 <213> Danio rerio

<400> 63
 Met Val Leu Asn Cys Ala Tyr Pro Gly Cys Leu Asn Leu Phe Lys Lys
 1 5 10 15
 Glu Arg Leu Arg Ser Asn Ser Ser Ser His Gly Gly Lys Leu Thr Phe
 20 25 30
 His Arg Phe Pro Thr Leu Glu Pro Gly Arg Leu Leu Leu Trp Arg Ala
 35 40 45
 Ala Leu Gly Met Asp Pro Asp Thr Pro Met Arg Ser Leu Arg Val Trp
 50 55 60
 Arg Ile Cys Ser Glu His Phe Ser Pro Glu Asp Phe Arg Ala Val Asn
 65 70 75 80

Gly Asn Lys Val Leu Leu Lys Ala Ser Ala Val Pro Arg Val Tyr Ser
85 90 95
Thr Pro Ala Pro Gly Ser Arg Ala Asp
100 105

<210> 64
<211> 99
<212> PRT
<213> Danio rerio

<400> 64
Met Ala Ser Ser Arg Arg Cys Tyr Cys Ser Val Pro Gly Cys Ser Asn
1 5 10 15
Ser Lys Lys Arg His Pro Tyr Leu Ser Phe His Asp Phe Pro Lys Asp
20 25 30
Glu Gly Gln Arg Lys Ser Trp Val Lys Phe Ile Arg Arg Glu Glu Gly
35 40 45
Pro Phe Phe Gln Ile Lys Arg Gly Ser Thr Phe Val Cys Ser Met His
50 55 60
Phe Lys Ala Asp Asp Ile Tyr Thr Thr Ile Ser Gly Arg Arg Lys Ile
65 70 75 80
Asn Pro Gly Ala Ala Pro Arg Leu Phe Ser Trp Asn Asn Trp Ser Thr
85 90 95
Asp Lys Val

<210> 65
<211> 66
<212> PRT
<213> Danio rerio

<400> 65
Phe Pro Lys Glu Asn Val Leu Arg Lys Gln Trp Glu Ile Ala Leu Lys
1 5 10 15
Arg Lys Gly Phe Ser Ala Ser Glu Ser Ser Val Leu Cys Ser Glu His
20 25 30
Phe Arg Pro Gln Asp Leu Asp Arg Thr Gly Gln Thr Val Arg Val Arg
35 40 45
Asp Gly Ala Lys Pro Ser Val Phe Ser Phe Pro Ala His Met Gln Lys
50 55 60
His Val
65

<210> 66
<211> 93
<212> PRT
<213> Danio rerio

<400> 66
Ser Ser Glu His Cys Cys Val Pro Leu Cys Gly Ala Ser Ser Arg Phe
1 5 10 15
Asn Ser Ala Val Ser Phe His Thr Phe Pro Val Ser Thr Glu Ile Arg
20 25 30
Glu Lys Trp Ile Lys Asn Ile Arg Arg Glu Lys Leu Asn Ile Thr Tyr

35 40 45
 His Thr Arg Val Cys Cys Arg His Phe Thr Thr Asp Asp Leu Ile Gln
 50 55 60
 Pro Arg Asn Pro Ile Gly Arg Arg Leu Leu Arg Lys Gly Ala Val Pro
 65 70 75 80
 Thr Leu Phe Lys Trp Asn Gly Tyr Ser Asp Ala Glu Ala
 85 90

<210> 67
 <211> 93
 <212> PRT
 <213> Danio rerio

<400> 67
 Met Pro Asp Phe Cys Ala Ala Tyr Gly Cys Ser Asn Glu Arg Thr Lys
 1 5 10 15
 Lys Leu Lys Asp Lys Gly Ile Thr Phe His Arg Phe Pro Arg Asp Val
 20 25 30
 Lys Arg Arg Gln Ala Trp Thr Leu Ala Leu Arg Arg Asp Lys Phe Glu
 35 40 45
 Pro Lys Pro Arg Ser Leu Leu Cys Ser Cys His Phe Arg Pro Glu Asp
 50 55 60
 Phe Asp Arg Thr Gly Gln Thr Val Arg Leu Arg Asp Gly Val Ile Pro
 65 70 75 80
 Ser Ile Phe Asn Phe Ser Asn Pro Leu Ser Lys Leu Ser
 85 90

<210> 68
 <211> 97
 <212> PRT
 <213> Danio rerio

<400> 68
 Met Pro Val Cys Ser Ala Tyr Lys Cys Lys Lys Arg Ser Asp Arg Glu
 1 5 10 15
 Tyr Lys Glu Ala Tyr Lys Arg Gly Glu Phe Ser Phe His Lys Phe Pro
 20 25 30
 Leu Glu Asp Gly Leu Arg Val Arg Glu Trp Leu Arg Arg Met Arg Trp
 35 40 45
 Gln Asn Trp Trp Pro Thr Gly Asn Ser Val Leu Cys Ser Asp His Phe
 50 55 60
 Glu Lys Asp Cys Phe Glu Gln Val Gly Ser His Lys Arg Leu Arg Lys
 65 70 75 80
 Ser Ala Val Pro Thr Ile Phe Asn Phe Pro Lys His Leu Gln Trp Lys
 85 90 95
 Val

<210> 69
 <211> 90
 <212> PRT
 <213> Danio rerio

<400> 69

Met Val Leu Val Cys Ser Ala Tyr Asn Cys Lys Asn Thr Leu Arg Asn
 1 5 10 15
 Lys Ser Val Ser Phe His Leu Phe Pro Leu Lys Asp Pro Ser Leu Leu
 20 25 30
 Lys Lys Trp Leu Lys Asn Leu Arg Trp Lys Asp Trp Lys Pro Asn Pro
 35 40 45
 Asn Ser Lys Ile Cys Ser Ala His Phe Glu Glu Lys Cys Phe Ile Leu
 50 55 60
 Glu Gly Lys Lys Thr Arg Leu His Thr Trp Ala Val Pro Thr Ile Phe
 65 70 75 80
 Ser Phe Pro Asn Arg Phe Ser Glu Arg Asn
 85 90

<210> 70
 <211> 107
 <212> PRT
 <213> Danio rerio

<400> 70
 Met Asn Ser Ile Ser Leu Lys Tyr Leu Arg Arg Glu Cys Ala Tyr Ser
 1 5 10 15
 Arg Tyr Cys Cys Val Pro Phe Cys Lys Ile Ser Ser Arg Phe Asn Ser
 20 25 30
 Val Ile Ser Phe His Lys Leu Pro Leu Asp Arg Ala Thr Arg Lys Met
 35 40 45
 Trp Leu His Asn Ile Arg Arg Lys Thr Phe Glu Val Ser Pro His Val
 50 55 60
 Arg Val Cys Ser Arg His Phe Thr Asn Asp Asp Phe Ile Glu Pro Ser
 65 70 75 80
 Tyr Pro Thr Ala Arg Arg Leu Leu Lys Lys Gly Ala Val Pro Thr Leu
 85 90 95
 Phe Arg Trp Asn Asn Asp Ser Thr Ser Gly Gln
 100 105

<210> 71
 <211> 89
 <212> PRT
 <213> Danio rerio

<400> 71
 Leu Arg Leu Arg Gln Ser Ala Ser Ser His Glu Glu Ser Leu Thr Phe
 1 5 10 15
 Tyr Ser Leu Pro Leu Gln Asp Phe Lys Arg Leu Asn Leu Trp Leu Asn
 20 25 30
 Ala Val Arg Arg Asp Thr Lys Ser Ser Ile Arg Asn Ile Arg Gly Leu
 35 40 45
 Arg Val Cys Ser Glu His Phe Ala Gln Asp Asp Phe Ser Leu Asn Arg
 50 55 60
 Gly Ser Lys Arg Arg Leu Lys Ser Thr Ala Val Pro Lys Cys Asn Glu
 65 70 75 80
 Ala Leu Pro Gln Ile Arg Arg Ala Gly
 85

<210> 72

<211> 105
 <212> PRT
 <213> Danio rerio

<400> 72
 Met Val Ile Thr Cys Ala Cys Pro Gly Cys Asp Asn Arg Tyr Lys Thr
 1 5 10 15
 Leu Arg Leu Arg Ser Asp Ser Lys Phe His Pro Gly Lys Leu Thr Phe
 20 25 30
 His Lys Phe Pro Thr Ser Asp Pro Glu Arg Leu Lys Leu Trp Leu Leu
 35 40 45
 Ala Leu Gly Leu Asp Ile Asn Thr Pro Leu Ser Val Leu Glu Thr Arg
 50 55 60
 Arg Ile Cys Ser Asp His Phe Ser Pro Phe Asp Phe Lys Asp Thr Lys
 65 70 75 80
 Gly Ser Ile Val Gln Leu Lys Ser Trp Ala Val Pro Met Asn Leu Ser
 85 90 95
 Glu Gln Phe Val Asp Asp Pro Ser Lys
 100 105

<210> 73
 <211> 96
 <212> PRT
 <213> Danio rerio

<400> 73
 Met Pro Asp Cys Cys Ala Ala Ala Asn Cys Lys Gln Ser Thr Asp Gln
 1 5 10 15
 Ser Ser Val Ser Phe Phe Glu Phe Pro Leu Asp Pro Asp Arg Cys Arg
 20 25 30
 Gln Trp Val Gly Arg Cys Asn Arg Pro Asp Leu Gln Thr Lys Thr Pro
 35 40 45
 Glu Asp Leu His Lys Asn Tyr Lys Val Cys Ser Arg His Phe Glu Thr
 50 55 60
 Ser Met Ile Cys Gln Gln Ser Ala Val Lys Cys Ile Leu Lys Asp Asp
 65 70 75 80
 Ala Val Pro Thr Leu Phe Asn Phe Ser Thr Asn Gln Asp Asn Ala Gln
 85 90 95

<210> 74
 <211> 91
 <212> PRT
 <213> Danio rerio

<400> 74
 Met Val Lys Cys Thr Val Gln Gly Cys Ile Asn Phe Ser Asp Leu Arg
 1 5 10 15
 Pro Glu Glu Gln Pro Asn Arg Pro Arg Lys Arg Phe Phe Arg Phe Pro
 20 25 30
 Lys Asp Lys Val Leu Val Lys Val Trp Leu Ala Ala Leu Arg Asp Thr
 35 40 45
 Glu Arg Glu Ile Thr Asp Leu His Arg Ile Cys Glu Asp His Phe Leu
 50 55 60
 Ser His His Ile Thr Ala Asp Gly Ile Ser Pro Asp Ala Ile Pro Ile
 65 70 75 80

Met Pro Pro Leu Asp Gly Pro Val Gly Asn Trp
 85 90

<210> 75
 <211> 84
 <212> PRT
 <213> Danio rerio

<400> 75
 Met Pro Ile Ser Cys Ser Ala Val Asp Cys Ser Asn Arg Phe Val Lys
 1 5 10 15
 Gly Ser Glu Ile Arg Phe Tyr Arg Phe Pro Ile Ser Lys Pro Gln Leu
 20 25 30
 Ala Glu Gln Trp Val Arg Ser Leu Gly Arg Lys Asn Phe Val Pro Thr
 35 40 45
 Gln Asn Ser Cys Leu Cys Ser Glu His Phe Gln Pro Asp Cys Phe Arg
 50 55 60
 Asp Tyr Asn Gly Lys Leu Phe Leu Arg Glu Asp Ala Val Pro Thr Ile
 65 70 75 80
 Phe Ser Asn Ser

<210> 76
 <211> 95
 <212> PRT
 <213> Oryzias latipes

<400> 76
 Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln
 1 5 10 15
 Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Glu Arg Cys Arg
 20 25 30
 Ile Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Ala Lys Thr Ala
 35 40 45
 Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Asp Pro
 50 55 60
 Ala Met Val Cys Lys Thr Ser Pro Tyr Arg Thr Val Leu Lys Asp Thr
 65 70 75 80
 Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Lys Asn Pro
 85 90 95

<210> 77
 <211> 90
 <212> PRT
 <213> Oryzias latipes

<400> 77
 Met Pro Thr Gly Cys Ala His Ala Asn Cys Arg Asn Val Val Gly Lys
 1 5 10 15
 Phe Arg Gly Val Thr Phe His Lys Phe Pro Arg Asp Pro Glu Lys Leu
 20 25 30
 Ser Arg Trp Thr Lys Phe Met Lys Arg His Glu Ser Trp Val Pro Lys
 35 40 45
 Tyr Tyr Asp Arg Val Cys Ser Val His Phe Ser Ser Glu His Phe Asp

50 55 60
 Arg Thr Gly Gln Thr Val Arg Leu Arg Asp Asn Ala Glu Pro Ser Leu
 65 70 75 80
 Pro His Leu Pro Trp Arg Phe Pro Lys Ser
 85 90

<210> 78
 <211> 94
 <212> PRT
 <213> *Oryzias latipes*

<400> 78
 Met Gln Asn Arg Cys Ala Val Leu Thr Cys Pro Ser Gly Lys Thr Asp
 1 5 10 15
 Phe Gln Pro Met Phe Arg Phe Pro His Asp Gln Glu Arg Ser Arg Arg
 20 25 30
 Trp Val Glu Lys Cys Gln Gly Glu Asn Leu Ile Gly Lys Ser Pro Glu
 35 40 45
 Gln Leu Tyr Arg Tyr Tyr Arg Ile Cys Lys Arg His Phe Glu Thr Ser
 50 55 60
 Ala Phe Asp Cys Asp Ala Asp Gly Ala Val Leu Lys Lys Asp Ala Val
 65 70 75 80
 Pro Thr Ile Phe Asp Ala Ser Val Pro Pro Gln Ser Ser Gln
 85 90

<210> 79
 <211> 92
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 79
 Met Pro Ala His Cys Ala Val Ile Asn Cys Ser His Lys Tyr Val His
 1 5 10 15
 Ala Gly Ser Ile Ser Phe His Arg Phe Pro Phe Lys Arg Lys Asp Leu
 20 25 30
 Leu Gln Lys Trp Lys Glu Phe Thr Gln Arg Ser Ala Gln Trp Met Pro
 35 40 45
 Ser Lys Trp Ser Ala Leu Cys Ser Arg His Phe Gly Asp Glu Asp Phe
 50 55 60
 Asn Cys Ser Asn Asn Arg Lys Thr Leu Lys Lys Asn Ala Val Pro Ser
 65 70 75 80
 Ile Arg Val Ser Glu Asp Asp Ser Met Ser Gly His
 85 90

<210> 80
 <211> 90
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 80
 Met Pro Thr Ile Arg Arg Cys Cys Ile Ile Gly Cys Leu Ser Asn Ser
 1 5 10 15
 Arg Gln His Pro Ser Met Gln Phe Phe Ala Phe Pro Arg Pro Glu Asn
 20 25 30

Pro Phe His Lys Leu Trp Lys Glu Ala Cys His Ala Ser Leu Arg Arg
 35 40 45
 Ile Val Pro Phe Lys Lys Pro Val Val Cys Ala Leu His Phe Asp Pro
 50 55 60
 Ser Val Leu Gly Gly Arg Arg Leu Gln Ser Asn Ala Leu Pro Thr Leu
 65 70 75 80
 Arg Leu Glu Val Pro Ser Asn Leu Glu Ala
 85 90

<210> 81
 <211> 104
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 81
 Met Arg Cys Ala Val Pro Asn Cys Arg Asn Phe Ser Asp Cys Arg Ser
 1 5 10 15
 Lys Arg Asn Ala Ala Gln Gln Gln Arg Leu Gly Phe Phe Arg Phe Pro
 20 25 30
 Lys Cys Pro Asp Thr Phe Lys Ala Trp Leu Ala Phe Cys Gly Tyr Thr
 35 40 45
 Glu Glu Ser Leu Lys Leu Lys Asn Pro Cys Ile Cys Ile Glu His Phe
 50 55 60
 Lys Asp Glu Asp Ile Glu Gly Ser Leu Lys Phe Glu Met Gly Leu Ala
 65 70 75 80
 Lys Lys Arg Thr Leu Arg Pro Gly Ala Val Pro Cys Val Asn Lys Ser
 85 90 95
 Gln Glu Ser Gly Ser Asp Arg Ala
 100

<210> 82
 <211> 96
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 82
 Met Gly Gly Thr Lys Cys Cys Phe Arg Asp Cys Pro Val Gly Ser Ser
 1 5 10 15
 Arg Asn Pro Asn Met His Phe Phe Lys Phe Pro Val Lys Asp Pro Lys
 20 25 30
 Arg Leu Lys Asp Trp Val Arg Asn Cys Ser Asn Pro Asp Val Ser Asn
 35 40 45
 Ala Pro Pro Ser Lys Leu Ala Ala Lys Thr Val Cys Ala Arg His Phe
 50 55 60
 Arg Ala Glu Cys Phe Met Asn Tyr Lys Met Asp Arg Leu Ile Pro Met
 65 70 75 80
 Gln Thr Pro Thr Leu Phe Arg Ile Asn Arg Asp Leu Ala Leu Asp Tyr
 85 90 95

<210> 83
 <211> 96
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 83

Met Ala Thr Arg Ser Cys Ala Tyr Lys Asp Cys Glu Tyr Tyr Tyr Val
1 5 10 15
Gly His Glu Asn Ala Leu Thr Lys Gly Arg Thr Leu Phe Ala Phe Pro
20 25 30
Lys Gln Pro Gln Arg Ala Arg Ile Trp His Glu Asn Gly Gln Val His
35 40 45
Pro Lys Ile Pro His Ser Gln Leu Phe Met Cys Ser Leu His Phe Asp
50 55 60
Arg Lys Phe Ile Ser Ser Lys Asn Arg Thr Leu Leu Val Gly Glu
65 70 75 80
Ala Val Pro Phe Pro Tyr Glu Glu Ser Ser Ser Lys Pro Glu Glu Glu
85 90 95

<210> 84

<211> 87

<212> PRT

<213> *Drosophila melanogaster*

<400> 84

Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu
1 5 10 15
Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser
20 25 30
Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe
35 40 45
Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys
50 55 60
Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro
65 70 75 80
Glu Pro Glu Lys Ile Lys Glu
85

<210> 85

<211> 92

<212> PRT

<213> *Anopheles gambiae*

<400> 85

Met Pro Ala Ser Cys Val Ile Pro Asp Cys Asp Leu Lys Tyr Thr His
1 5 10 15
Gly Asp Asp Val Ser Phe His Lys Phe Pro Leu Lys Ser Pro Glu Leu
20 25 30
Leu Lys Gln Trp Ile Gln Phe Thr Gly Arg Asp Glu Gly Trp His Pro
35 40 45
Thr Lys Trp Ser Ala Leu Cys Ser Arg His Phe Val Ala Ser Asp Phe
50 55 60
Lys Gly Cys Ala Ala Arg Lys Ile Leu Leu Pro Thr Ala Val Pro Ser
65 70 75 80
Val Arg Asn Ala Val Ala Ala Lys Ala Gln Pro Asn
85 90

<210> 86

<211> 108

<212> PRT
 <213> Anopheles gambiae

<400> 86
 Met Ser Ala Val Arg Ser Cys Ala Leu Cys Gln Asn Arg Ser Asn Ile
 1 5 10 15
 Thr Asp Gln Gln Thr Asp Asp Ala Leu Glu Arg Ile Thr Tyr His Lys
 20 25 30
 Phe Pro Thr Asn Pro Val Arg Arg Asp Arg Trp Ile Glu Phe Cys Asp
 35 40 45
 Leu Pro Lys Glu Ser Phe Pro Lys Ser Ala Tyr Lys Phe Leu Cys Ser
 50 55 60
 Ser His Phe Thr Pro Glu Cys Phe Glu Arg Asp Leu Arg Gly Glu Leu
 65 70 75 80
 Leu Tyr Gly Thr Lys Arg Met Thr Leu Gln Lys Asp Ala Met Pro Thr
 85 90 95
 Ile Arg Ser Val Ser Gln Gln Leu Lys Arg Thr Thr
 100 105

<210> 87
 <211> 100
 <212> PRT
 <213> Anopheles gambiae

<400> 87
 Met Trp Asp Cys Ala Val Ile Gly Cys Pro Asn Ser Arg Phe Asn Ala
 1 5 10 15
 Gln Lys Thr Arg Pro Arg Ile Ser Phe His Val Phe Pro His Pro Val
 20 25 30
 Arg Glu Ser Asn Arg Phe Arg Arg Trp Leu Ala Leu Ile Asn Asn Pro
 35 40 45
 Arg Leu Phe Arg Leu Asp Pro Leu Asn Val Phe Lys Ser Val Arg Val
 50 55 60
 Cys Arg Arg His Phe Gly Pro Asp Cys Phe Asn Gly Val Cys Arg Asn
 65 70 75 80
 Leu Leu Pro Thr Ala Ile Pro Thr Leu Asn Leu Pro Glu Val Arg Pro
 85 90 95
 Val Ala Leu Val
 100

<210> 88
 <211> 95
 <212> PRT
 <213> Anopheles gambiae

<400> 88
 Met Gly Ile Arg Lys Cys Ile Val Pro Glu Cys Pro Ser Ser Ser Ala
 1 5 10 15
 Arg Pro Glu Asp Arg Gly Val Thr Tyr His Lys Ile Pro Tyr Leu Asp
 20 25 30
 Glu Met Lys Arg Leu Trp Ile Val Ala Cys His Leu Pro Asp Asp Tyr
 35 40 45
 Phe Ala Thr Lys Ala Ser Asn Val Cys Ser Arg His Phe Arg Arg Ala
 50 55 60
 Asp Phe Gln Glu Phe Lys Gly Lys Lys Tyr Val Leu Lys Leu Gly Val

65					70					75				80
Val	Pro	Thr	Val	Phe	Pro	Trp	Thr	Val	Thr	Lys	Pro	Pro	Gly	Glu
				85					90					95

<210> 89
 <211> 107
 <212> PRT
 <213> Anopheles gambiae

<400> 89

Met	Gly	Lys	Ile	Ser	Gly	Ser	His	Cys	Leu	Val	Leu	Gly	Cys	Arg	Asn
1				5					10					15	
Arg	Gln	Leu	Leu	Asn	Gln	Ala	Asn	Ile	Arg	Ser	Tyr	Phe	Arg	Phe	Pro
			20					25					30		
Arg	Asp	Ala	Asp	Leu	Cys	Lys	Lys	Trp	Val	Asp	Phe	Cys	Asn	Arg	Pro
		35					40					45			
Glu	Leu	Tyr	Lys	Lys	Tyr	Asp	Glu	Asn	Gly	Pro	Glu	Tyr	Leu	Tyr	Lys
	50					55					60				
Ser	Ser	Arg	Ile	Cys	Ser	Asp	His	Phe	Gln	Pro	Ala	Asp	Phe	Asn	Asn
65				70						75				80	
Pro	Asn	Leu	Phe	Ser	Gln	Gly	Leu	Lys	Lys	Gly	Ser	Val	Pro	Ser	Val
			85						90					95	
Asn	Pro	Ala	Asn	Leu	Glu	Ala	Ala	Lys	Pro	His					
			100					105							

<210> 90
 <211> 104
 <212> PRT
 <213> Anopheles gambiae

<400> 90

Met	Thr	Asn	Cys	Ser	Cys	Ala	Val	Ala	Asp	Cys	Asn	Asn	Asn	Arg	Arg
1				5					10					15	
Asn	Val	Arg	Lys	Arg	Met	Leu	Asp	Ile	Gly	Phe	His	Thr	Phe	Pro	Ser
			20					25					30		
Asp	Pro	Val	Gln	Arg	Gln	Arg	Trp	Val	Lys	Phe	Cys	Gln	Arg	Glu	Pro
		35					40					45			
Ser	Trp	Gln	Pro	Lys	Ser	Cys	Asp	Ser	Met	Cys	Ser	Val	His	Phe	Lys
	50					55					60				
Asp	Thr	Asp	Tyr	Gln	Met	Ser	His	Ser	Pro	Leu	Ile	Arg	Leu	Ala	Thr
65				70						75				80	
Asn	Leu	Arg	Arg	Leu	Lys	Pro	Asp	Val	Ile	Pro	Thr	Ile	Arg	Lys	Gly
				85					90					95	
Arg	Ala	Ile	Pro	Val	Ala	Ala	Arg								
			100												

<210> 91
 <211> 95
 <212> PRT
 <213> Anopheles gambiae

<400> 91

Met	Gly	Gly	Cys	Arg	Cys	Thr	Phe	Arg	Asp	Cys	Glu	Asn	Gly	Thr	Ala
1				5					10					15	

Ser Arg Lys Glu Leu His Tyr Phe Arg Tyr Pro Val Arg Asp Gln Glu
20 25 30
Arg Leu Ile Glu Trp Ala Lys Asn Ala Asp Arg Leu Glu Phe Val Asp
35 40 45
Leu Pro Val Asp Lys Val Ser Asn Lys Val Val Cys Gln Glu His Phe
50 55 60
Glu Arg Lys Met Phe Met Asn Asp Leu Arg Asp Arg Leu Thr Lys Met
65 70 75 80
Ala Ile Pro Arg Leu Met Val Met Pro Asp Glu Thr Ile Val Asn
85 90 95

<210> 92

<211> 97

<212> PRT

<213> Anopheles gambiae

<400> 92

Met Lys Cys Phe Val Ser Gly Cys Asp Thr Asp Asp Asn Val Val Ser
1 5 10 15
Tyr Thr Ser Val Phe Tyr Val Asn Cys Pro Thr Asp Pro Thr Ile Gln
20 25 30
Gln Gln Trp Phe Thr Leu Leu Glu Val Thr Asp Pro Asp Ala Met Arg
35 40 45
Ala Leu Val Asp Gly Arg Ser Lys Val Cys Ser Cys His Phe Thr Glu
50 55 60
Asp Cys Phe Gly His His Pro Val Tyr Gly Tyr Arg Tyr Leu Leu Ala
65 70 75 80
Thr Ala Leu Pro Thr Val Phe Pro Pro Arg Lys Glu Ile Glu Gln Pro
85 90 95

Lys

<210> 93

<211> 92

<212> PRT

<213> Bombyx mori

<400> 93

Met Pro Arg Cys Ser Val Ile Val Cys Lys Asn Asn Ser Cys Ile Val
1 5 10 15
Asn Tyr Lys Lys Asp Ser Ile Ser Phe His Thr Tyr Pro Lys Asp Pro
20 25 30
Lys Ile Lys Glu Met Trp Ile Asn Ala Thr Gly Arg Gly Pro Ser Trp
35 40 45
Phe Pro Thr Lys Asn His Thr Ile Cys Ser Ser His Phe Glu Pro Lys
50 55 60
Cys Phe Gln Pro Leu Lys Lys Val Arg Arg Leu Phe Glu Trp Ser Val
65 70 75 80
Pro Thr Leu Lys Leu Arg Met Val Leu Met Asn Tyr
85 90

<210> 94

<211> 96

<212> PRT

<213> Bombyx mori

<400> 94

```
Met Pro Asp Thr His Arg Thr Cys Glu Val Cys Gly Ile Lys Glu Arg
 1           5           10           15
His Leu Thr Glu Lys Arg Phe Phe Ala Arg Phe Pro Leu Asp Val Asn
          20           25           30
Arg Cys Lys Gln Trp Val Lys Met Val Gly Lys Glu Asp Leu Ala Tyr
          35           40           45
Leu Gln Val His Met Leu His Asp Leu Lys His Val Cys Glu Ala His
          50           55           60
Phe Ser Arg Arg Asp Phe Thr Lys Ser Lys Lys Arg Leu Lys Lys Arg
65           70           75           80
Ala Val Pro Lys Leu Asn Leu Thr Leu Pro Pro Leu Arg Asp Glu Ile
          85           90           95
```

<210> 95

<211> 89

<212> PRT

<213> Caenorhabditis elegans

<400> 95

```
Met Pro Thr Thr Cys Gly Phe Pro Asn Cys Lys Phe Arg Ser Arg Tyr
 1           5           10           15
Arg Gly Leu Glu Asp Asn Arg His Phe Tyr Arg Ile Pro Lys Arg Pro
          20           25           30
Leu Ile Leu Arg Gln Arg Trp Leu Thr Ala Ile Gly Arg Thr Glu Glu
          35           40           45
Thr Val Val Ser Gln Leu Arg Ile Cys Ser Ala His Phe Glu Gly Gly
          50           55           60
Glu Lys Lys Glu Gly Asp Ile Pro Val Pro Asp Pro Thr Val Asp Lys
65           70           75           80
Gln Ile Lys Ile Glu Leu Pro Pro Lys
          85
```

<210> 96

<211> 100

<212> PRT

<213> Caenorhabditis elegans

<400> 96

```
Met Tyr Gly Val Gln Ser Glu Cys Val Leu Cys Ala His Ala Asn Asp
 1           5           10           15
Cys Thr Ala Met Ile Pro Phe Pro Gly Pro Asp Asp Glu Lys Leu Arg
          20           25           30
Thr Lys Trp Ile Asn Ser Met Cys Arg Glu Pro Trp Ile Tyr Arg Tyr
          35           40           45
Leu Ser Thr Arg Leu Glu Lys Pro Gly Arg His Tyr Leu Cys Ala Ser
          50           55           60
His Phe Asn Arg Asn Ser Leu Arg Tyr His Ala Gly Leu Gly Leu Trp
65           70           75           80
Arg Arg Ala Ala Ala Cys Pro Val Leu Ala Cys Thr Thr Asp Glu Glu
          85           90           95
Arg Gln Glu Val
          100
```

<210> 97
 <211> 86
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 97
 Met Glu His Pro Leu Gln Cys Cys Tyr Cys Leu Glu Val Tyr Glu Lys
 1 5 10 15
 Arg Tyr Met Thr Gln Val Pro Lys Thr Glu Gln Arg Ile Ala Arg Trp
 20 25 30
 Val Ala Ile Leu Gly Glu Gln Phe Arg Ile Arg Leu Arg Met Lys Pro
 35 40 45
 Ala Asn Tyr Met Cys Arg Lys His Phe Pro Gln Ala Asp Phe Ser Ser
 50 55 60
 Arg Gly Arg Leu Leu Lys Thr Ala Val Pro Asn Val Val Ser Gln Glu
 65 70 75 80
 Lys Val Leu Ala Phe Lys
 85

<210> 98
 <211> 97
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 98
 Asn Leu Thr His Lys Pro Cys Thr Val Cys Asn Arg Val Met Lys Ser
 1 5 10 15
 Gly Glu Met His Leu Asn Phe Pro Ala Asp Leu Asp Arg Arg Arg Ile
 20 25 30
 Trp Ala Asn Leu Leu Gly Phe Lys Tyr Lys Asp Ile Leu Arg Ser Lys
 35 40 45
 Met Gly Pro Val Ser Phe Ser Ile Ala Ala Gly Pro Ile Cys Thr Glu
 50 55 60
 His Phe Ala Glu Glu Cys Phe Arg Asn His Asn Phe Asn Lys Ser Ala
 65 70 75 80
 Ile Glu Ala Phe Gly Val Pro Val Ala Ile Ser Pro Asp Val Lys Thr
 85 90 95
 Thr

<210> 99
 <211> 210
 <212> PRT
 <213> *Mus musculus*

<400> 99
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1 5 10 15
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
 20 25 30
 Cys Lys Gln Trp Glu Ala Ala Val Lys Arg Lys Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys

50		55		60											
Arg	Glu	Cys	Asn	Asn	Lys	Leu	Leu	Lys	Glu	Asn	Ala	Val	Pro	Thr	Ile
65				70						75					80
Phe	Leu	Tyr	Ile	Glu	Pro	His	Glu	Lys	Lys	Glu	Asp	Leu	Glu	Ser	Gln
			85						90					95	
Glu	Gln	Leu	Pro	Ser	Pro	Ser	Pro	Pro	Ala	Ser	Gln	Val	Asp	Ala	Ala
			100					105					110		
Ile	Gly	Leu	Leu	Met	Pro	Pro	Leu	Gln	Thr	Pro	Asp	Asn	Leu	Ser	Val
		115					120					125			
Phe	Cys	Asp	His	Asn	Tyr	Thr	Val	Glu	Asp	Thr	Met	His	Gln	Arg	Lys
	130					135					140				
Arg	Ile	Leu	Gln	Leu	Glu	Gln	Gln	Val	Glu	Lys	Leu	Arg	Lys	Lys	Leu
145				150						155					160
Lys	Thr	Ala	Gln	Gln	Arg	Cys	Arg	Arg	Gln	Glu	Arg	Gln	Leu	Glu	Lys
			165					170						175	
Leu	Lys	Glu	Val	Val	His	Phe	Gln	Arg	Glu	Lys	Asp	Asp	Ala	Ser	Glu
		180						185					190		
Arg	Gly	Tyr	Val	Ile	Leu	Pro	Asn	Asp	Tyr	Phe	Glu	Ile	Val	Glu	Val
	195					200						205			
Pro	Ala														
210															

<210> 100

<211> 217

<212> PRT

<213> Mus musculus

<400> 100

Met	Pro	Thr	Asn	Cys	Ala	Ala	Ala	Gly	Cys	Ala	Ala	Thr	Tyr	Asn	Lys
1			5					10						15	
His	Ile	Asn	Ile	Ser	Phe	His	Arg	Phe	Pro	Leu	Asp	Pro	Lys	Arg	Arg
		20					25					30			
Lys	Glu	Trp	Val	Arg	Leu	Val	Arg	Arg	Lys	Asn	Phe	Val	Pro	Gly	Lys
	35				40						45				
His	Thr	Phe	Leu	Cys	Ser	Lys	His	Phe	Glu	Ala	Ser	Cys	Phe	Asp	Leu
	50				55				60						
Thr	Gly	Gln	Thr	Arg	Arg	Leu	Lys	Met	Asp	Ala	Val	Pro	Thr	Ile	Phe
65			70					75						80	
Asp	Phe	Cys	Thr	His	Ile	Lys	Ser	Leu	Lys	Leu	Lys	Ser	Arg	Asn	Leu
		85					90						95		
Leu	Lys	Thr	Asn	Asn	Ser	Phe	Pro	Pro	Thr	Gly	Pro	Cys	Asn	Leu	Lys
	100						105					110			
Leu	Asn	Gly	Ser	Gln	Gln	Val	Leu	Leu	Glu	His	Ser	Tyr	Ala	Phe	Arg
	115					120						125			
Asn	Pro	Met	Glu	Ala	Lys	Lys	Arg	Ile	Ile	Lys	Leu	Glu	Lys	Glu	Ile
	130				135						140				
Ala	Ser	Leu	Arg	Lys	Lys	Met	Lys	Thr	Cys	Leu	Gln	Arg	Glu	Arg	Arg
145			150						155						160
Ala	Thr	Arg	Arg	Trp	Ile	Lys	Ala	Thr	Cys	Phe	Val	Lys	Ser	Leu	Glu
		165						170						175	
Ala	Ser	Asn	Met	Leu	Pro	Lys	Gly	Ile	Ser	Glu	Gln	Ile	Leu	Pro	Thr
	180						185					190			
Ala	Leu	Ser	Asn	Leu	Pro	Leu	Glu	Asp	Leu	Lys	Ser	Leu	Glu	Gln	Asp
	195				200							205			
Gln	Gln	Asp	Lys	Thr	Val	Pro	Ile	Leu							
210					215										

<210> 101
 <211> 218
 <212> PRT
 <213> Mus musculus

<400> 101
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser
 1 5 10 15
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu
 20 25 30
 Leu Leu Arg Glu Trp Val Leu Asn Ile Gly Arg Ala Asp Phe Lys Pro
 35 40 45
 Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe
 50 55 60
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr
 65 70 75 80
 Val Phe Ala Phe Gln Asn Pro Thr Glu Val Cys Pro Glu Val Gly Ala
 85 90 95
 Gly Gly Asp Ser Ser Gly Arg Asn Met Asp Thr Thr Leu Glu Glu Leu
 100 105 110
 Gln Pro Pro Thr Pro Glu Gly Pro Val Gln Gln Val Leu Pro Asp Arg
 115 120 125
 Glu Ala Met Glu Ala Thr Glu Ala Ala Gly Leu Pro Ala Ser Pro Leu
 130 135 140
 Gly Leu Lys Arg Pro Leu Pro Gly Gln Pro Ser Asp His Ser Tyr Ala
 145 150 155 160
 Leu Ser Asp Leu Asp Thr Leu Lys Lys Lys Leu Phe Leu Thr Leu Lys
 165 170 175
 Glu Asn Lys Arg Leu Arg Lys Arg Leu Lys Ala Gln Arg Leu Leu Leu
 180 185 190
 Arg Arg Thr Cys Gly Arg Leu Arg Ala Tyr Arg Glu Gly Gln Pro Gly
 195 200 205
 Pro Arg Ala Arg Arg Pro Ala Gln Gly Ser
 210 215

<210> 102
 <211> 205
 <212> PRT
 <213> Mus musculus

<400> 102
 Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys
 1 5 10 15
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser
 20 25 30
 Lys Arg Leu Ile Gln Trp Leu Lys Ala Val Gln Arg Asp Asn Trp Thr
 35 40 45
 Pro Thr Lys Tyr Ser Phe Leu Cys Ser Glu His Phe Thr Lys Asp Ser
 50 55 60
 Phe Ser Lys Arg Leu Glu Asp Gln His Arg Leu Leu Lys Pro Thr Ala
 65 70 75 80
 Val Pro Ser Ile Phe His Leu Ser Glu Lys Lys Arg Gly Ala Gly Gly
 85 90 95
 His Gly His Ala Arg Arg Lys Thr Thr Ala Ala Met Arg Gly His Thr

100 105 110
 Ser Ala Glu Thr Gly Lys Gly Thr Ile Gly Ser Ser Leu Ser Ser Ser
 115 120 125
 Asp Asn Leu Met Ala Lys Pro Glu Ser Arg Lys Leu Lys Arg Ala Ser
 130 135 140
 Leu Gln Asp Asp Ala Ala Pro Lys Val Thr Pro Gly Ala Val Ser Gln
 145 150 155 160
 Glu Gln Gly Gln Ser Leu Glu Lys Thr Pro Gly Asp Asp Pro Ala Ala
 165 170 175
 Pro Leu Ala Arg Gly Gln Glu Glu Ala Gln Ala Ser Ala Thr Glu Ala
 180 185 190
 Asp His Gln Lys Ala Ser Ser Ser Thr Asp Ala Glu Gly
 195 200 205

<210> 103
 <211> 186
 <212> PRT
 <213> Mus musculus

<400> 103
 Ile Leu Gln Ala Phe Gly Ser Leu Lys Lys Gly Asp Val Leu Cys Ser
 1 5 10 15
 Arg His Phe Lys Lys Thr Asp Phe Asp Arg Ser Thr Leu Asn Thr Lys
 20 25 30
 Leu Lys Ala Gly Ala Ile Pro Ser Ile Phe Glu Cys Pro Tyr His Leu
 35 40 45
 Gln Glu Lys Arg Glu Lys Leu His Cys Arg Lys Asn Phe Leu Leu Lys
 50 55 60
 Thr Leu Pro Ile Thr His His Gly Arg Gln Leu Val Gly Ala Ser Cys
 65 70 75 80
 Ile Glu Glu Phe Glu Pro Gln Phe Ile Phe Glu His Ser Tyr Ser Val
 85 90 95
 Met Asp Ser Pro Lys Lys Leu Lys His Lys Leu Asp Arg Val Ile Ile
 100 105 110
 Glu Leu Glu Asn Thr Lys Glu Ser Leu Arg Asn Val Leu Ala Arg Glu
 115 120 125
 Lys His Phe Gln Lys Ser Leu Arg Lys Thr Ile Met Glu Leu Lys Asp
 130 135 140
 Glu Ser Leu Ile Ser Gln Glu Thr Ala Asn Ser Leu Gly Ala Phe Cys
 145 150 155 160
 Trp Glu Cys Tyr His Glu Ser Thr Ala Gly Gly Cys Ser Cys Glu Val
 165 170 175
 Ile Ser Tyr Met Leu His Leu Gln Leu Thr
 180 185

<210> 104
 <211> 194
 <212> PRT
 <213> Mus musculus

<400> 104
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30

Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Thr Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe
 85 90 95
 Ser Lys Leu Arg Arg Thr Ala Lys Thr Lys Gly His Gly Tyr Pro Pro
 100 105 110
 Gly Leu Pro Asp Val Ser Arg Leu Arg Arg Cys Arg Lys Arg Cys Ser
 115 120 125
 Glu Arg Gln Gly Pro Thr Thr Pro Phe Ser Pro Pro Pro Arg Ala Asp
 130 135 140
 Ile Ile Cys Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Thr Leu Pro
 145 150 155 160
 Ala Ser Pro Ala Val Arg Leu Asp Pro Gly Leu Asn Ser Pro Phe Ser
 165 170 175
 Asp Leu Leu Gly Pro Leu Gly Ala Gln Ala Asp Glu Ala Gly Cys Ser
 180 185 190
 Thr Gln

<210> 105
 <211> 305
 <212> PRT
 <213> Mus musculus

<400> 105
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
 1 5 10 15
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
 20 25 30
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
 35 40 45
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
 50 55 60
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
 65 70 75 80
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly
 85 90 95
 Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln Gln
 100 105 110
 Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Pro Ser Pro Ser Ser
 115 120 125
 Ser Thr Ala Gln Thr Thr Gln Leu Gln Pro Asn Leu Val Ser Ala Ser
 130 135 140
 Ala Ala Val Leu Leu Thr Leu Gln Ala Ala Val Asp Ser Asn Gln Ala
 145 150 155 160
 Pro Gly Ser Val Val Pro Val Ser Thr Thr Pro Ser Gly Asp Asp Val
 165 170 175
 Lys Pro Ile Asp Leu Thr Val Gln Val Glu Phe Ala Ala Ala Glu Gly
 180 185 190
 Ala Ala Ala Ala Ala Ala Ser Glu Leu Glu Ala Ala Thr Ala Gly
 195 200 205
 Leu Glu Ala Ala Glu Cys Thr Leu Gly Pro Gln Leu Val Val Val Gly

210 215 220
 Glu Glu Gly Phe Pro Asp Thr Gly Ser Asp His Ser Tyr Ser Leu Ser
 225 230 235 240
 Ser Gly Thr Thr Glu Glu Leu Leu Arg Lys Leu Asn Glu Gln Arg
 245 250 255
 Asp Ile Leu Ala Leu Met Glu Val Lys Met Lys Glu Met Lys Gly Ser
 260 265 270
 Ile Arg His Leu Arg Leu Thr Glu Ala Lys Leu Arg Glu Glu Leu Arg
 275 280 285
 Glu Lys Asp Arg Leu Leu Ala Met Ala Val Ile Arg Lys Lys His Gly
 290 295 300
 Met
 305

<210> 106
 <211> 305
 <212> PRT
 <213> Mus musculus

<400> 106
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
 1 5 10 15
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
 20 25 30
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
 35 40 45
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
 50 55 60
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
 65 70 75 80
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val Ala Arg Arg Pro Ala Gly
 85 90 95
 Ala Ala Ala Ala Arg Arg Arg Gln Gln Gln Gln Gln Gln Gln
 100 105 110
 Gln Gln Gln Gln Gln Gln Leu Gln Gln Gln Gln Pro Ser Pro Ser Ser
 115 120 125
 Ser Thr Ala Gln Thr Thr Gln Leu Gln Pro Asn Leu Val Ser Ala Ser
 130 135 140
 Ala Ala Val Leu Leu Thr Leu Gln Ala Ala Val Asp Ser Asn Gln Ala
 145 150 155 160
 Pro Gly Ser Val Val Pro Val Ser Thr Thr Pro Ser Gly Asp Asp Val
 165 170 175
 Lys Pro Ile Asp Leu Thr Val Gln Val Glu Phe Ala Ala Ala Glu Gly
 180 185 190
 Ala Ala Ala Ala Ala Ala Ala Ser Glu Leu Glu Ala Ala Thr Ala Gly
 195 200 205
 Leu Glu Ala Ala Glu Cys Thr Leu Gly Pro Gln Leu Val Val Val Gly
 210 215 220
 Glu Glu Gly Phe Pro Asp Thr Gly Ser Asp His Ser Tyr Ser Leu Ser
 225 230 235 240
 Ser Gly Thr Thr Glu Glu Leu Leu Arg Lys Leu Asn Glu Gln Arg
 245 250 255
 Asp Ile Leu Ala Leu Met Glu Val Lys Met Lys Glu Met Lys Gly Ser
 260 265 270
 Ile Arg His Leu Arg Leu Thr Glu Ala Lys Leu Arg Glu Glu Leu Arg
 275 280 285

Glu Lys Asp Arg Leu Leu Ala Met Ala Val Ile Arg Lys Lys His Gly
 290 295 300
 Met
 305

<210> 107
 <211> 652
 <212> PRT
 <213> Mus musculus

<400> 107
 Met Pro Asn Phe Cys Ala Ala Pro Asn Cys Thr Arg Lys Ser Thr Gln
 1 5 10 15
 Ser Asp Leu Ala Phe Phe Arg Phe Pro Arg Asp Pro Ala Arg Cys Gln
 20 25 30
 Lys Trp Val Glu Asn Cys Arg Arg Ala Asp Leu Glu Asp Lys Thr Pro
 35 40 45
 Asp Gln Leu Asn Lys His Tyr Arg Leu Cys Ala Lys His Phe Glu Thr
 50 55 60
 Ser Met Ile Cys Arg Thr Ser Pro Tyr Arg Thr Val Leu Arg Asp Asn
 65 70 75 80
 Ala Ile Pro Thr Ile Phe Asp Leu Thr Ser His Leu Asn Asn Pro His
 85 90 95
 Ser Arg His Arg Lys Arg Ile Lys Glu Leu Ser Glu Asp Glu Ile Arg
 100 105 110
 Thr Leu Lys Gln Lys Lys Ile Glu Glu Thr Ser Glu Gln Glu Gln
 115 120 125
 Thr Asn Thr Asn Ala Gln Asn Pro Ser Ala Glu Ala Val Asn Gln Gln
 130 135 140
 Asp Ala Asn Val Leu Pro Leu Thr Leu Glu Glu Lys Glu Asn Lys Glu
 145 150 155 160
 Tyr Leu Lys Ser Leu Phe Glu Ile Leu Val Leu Met Gly Lys Gln Asn
 165 170 175
 Ile Pro Leu Asp Gly His Glu Ala Asp Glu Val Pro Glu Gly Leu Phe
 180 185 190
 Ala Pro Asp Asn Phe Gln Ala Leu Leu Glu Cys Arg Ile Asn Ser Gly
 195 200 205
 Glu Glu Val Leu Arg Lys Arg Phe Glu Ala Thr Ala Val Asn Thr Leu
 210 215 220
 Phe Cys Ser Lys Thr Gln Gln Arg His Met Leu Glu Ile Cys Glu Ser
 225 230 235 240
 Cys Ile Arg Glu Glu Thr Leu Arg Glu Val Arg Asp Ser His Phe Phe
 245 250 255
 Ser Ile Ile Thr Asp Asp Val Val Asp Ile Ala Gly Glu Glu His Leu
 260 265 270
 Pro Val Leu Val Arg Phe Val Asp Asp Ala His Asn Leu Arg Glu Glu
 275 280 285
 Phe Val Gly Phe Leu Pro Tyr Glu Ala Asp Ala Glu Ile Leu Ala Val
 290 295 300
 Lys Phe His Thr Thr Ile Thr Glu Lys Trp Gly Leu Asn Met Glu Tyr
 305 310 315 320
 Cys Arg Gly Gln Ala Tyr Ile Val Ser Ser Gly Phe Ser Ser Lys Met
 325 330 335
 Lys Val Val Ala Ser Arg Leu Leu Glu Lys Tyr Pro Gln Ala Val Tyr
 340 345 350
 Thr Leu Cys Ser Ser Cys Ala Leu Asn Ala Trp Leu Ala Lys Ser Val

355	360	365
Pro Val Ile Gly Val Ser Val Ala Leu Gly Thr Ile Glu Glu Val Cys		
370	375	380
Ser Phe Phe His Arg Ser Pro Gln Leu Leu Leu Glu Leu Asp Ser Val		
385	390	395
Ile Ser Val Leu Phe Gln Asn Ser Glu Glu Arg Ala Lys Glu Leu Lys		400
	405	410
Glu Ile Cys His Ser Gln Trp Thr Gly Arg His Asp Ala Phe Glu Ile		415
	420	425
Leu Val Asp Leu Leu Gln Ala Leu Val Leu Cys Leu Asp Gly Ile Ile		430
	435	440
Asn Ser Asp Thr Asn Val Arg Trp Asn Asn Tyr Ile Ala Gly Arg Ala		445
	450	455
Phe Val Leu Cys Ser Ala Val Thr Asp Phe Asp Phe Ile Val Thr Ile		460
	465	470
Val Val Leu Lys Asn Val Leu Ser Phe Thr Arg Ala Phe Gly Lys Asn		475
	485	490
Leu Gln Gly Gln Thr Ser Asp Val Phe Phe Ala Ala Ser Ser Leu Thr		495
	500	505
Ala Val Leu His Ser Leu Asn Glu Val Met Glu Asn Ile Glu Val Tyr		510
	515	520
His Glu Phe Trp Phe Glu Glu Ala Thr Asn Leu Ala Thr Lys Leu Asp		525
	530	535
Ile Gln Met Lys Leu Pro Gly Lys Phe Arg Arg Ala Gln Gln Gly Asn		540
	545	550
Leu Glu Ser Gln Leu Thr Ser Glu Ser Tyr Tyr Lys Asp Thr Leu Ser		555
	565	570
Val Pro Thr Val Glu His Ile Ile Gln Glu Leu Lys Asp Ile Phe Ser		575
	580	585
Glu Gln His Leu Lys Ala Leu Lys Cys Leu Ser Leu Val Pro Ser Val		590
	595	600
Met Gly Gln Leu Lys Phe Asn Thr Ser Glu Glu His His Ala Asp Met		605
	610	615
Tyr Arg Ser Asp Leu Pro Asn Pro Asp Thr Leu Ser Ala Glu Leu His		620
	625	630
Cys Trp Arg Ile Lys Trp Lys His Arg Gly Lys Asp		635
	645	650

<210> 108
 <211> 180
 <212> PRT
 <213> Rattus norvegicus

<220>
 <223> RAT THAP

<221> UNSURE
 <222> 95
 <223> Xaa = any of the twenty amino acids

<400> 108
Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys Gln Leu Thr Phe
1 5 10 15
His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Arg Glu Trp Val Leu
20 25 30
Asn Ile Gly Arg Ala Asp Phe Lys Pro Lys Gln His Thr Val Ile Cys

35 40 45
 Ser Glu His Phe Arg Pro Glu Cys Phe Ser Ala Phe Gly Asn Arg Lys
 50 55 60
 Asn Leu Lys His Asn Ala Val Pro Thr Val Phe Ala Phe Gln Asn Pro
 65 70 75 80
 Ala Gln Val Cys Pro Glu Val Gly Ala Gly Asp Ser Ser Xaa Arg
 85 90 95
 Asn Met Asp Ala Thr Leu Glu Glu Leu Gln Ser Pro Asn Thr Glu Gly
 100 105 110
 Pro Met Gln Gln Val Leu Pro Asp Arg Gln Ala Thr Glu Ala Met Glu
 115 120 125
 Ala Ala Gly Leu Pro Ala Gly Pro Leu Gly Leu Lys Arg Pro Leu Pro
 130 135 140
 Gly Gln Pro Ser Asp His Ser Tyr Ala Leu Leu Asp Leu Asp Thr Leu
 145 150 155 160
 Lys Lys Lys Leu Phe Leu Thr Leu Lys Glu Asn Lys Arg Leu Arg Lys
 165 170 175
 Arg Leu Lys Ala
 180

<210> 109
 <211> 82
 <212> PRT
 <213> Rattus norvegicus

<400> 109
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
 1 5 10 15
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu
 20 25 30
 Asn Ile Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn
 35 40 45
 Thr Ala Gly Ile Trp Glu Pro Ser Leu Gln Pro Glu Ser Phe Tyr Phe
 50 55 60
 Ile Phe Met Glu Asn Leu Phe Phe Ile Leu Pro Pro Gln Leu Ser His
 65 70 75 80
 Ala Val

<210> 110
 <211> 309
 <212> PRT
 <213> Rattus norvegicus

<400> 110
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Thr Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly
 65 70 75 80

<210> 112
 <211> 104
 <212> PRT
 <213> Sus scrofa

<400> 112
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
 1 5 10 15
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu
 20 25 30
 Lys Val Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn
 35 40 45
 Ala Ala Gly Met Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg
 50 55 60
 His Phe Lys Lys Thr Asp Phe Asp Arg Thr Thr Pro Asn Ile Lys Leu
 65 70 75 80
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Ser His Leu Thr
 85 90 95
 Gly Glu Glu Arg Lys Ala Pro Leu
 100

<210> 113
 <211> 235
 <212> PRT
 <213> Sus scrofa

<220>
 <221> UNSURE
 <222> 57, 124, 192
 <223> Xaa = any of the twenty amino acids

<400> 113
 Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Xaa Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Glu Asn Cys Phe Glu Leu Val Gly Ile Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe
 85 90 95
 Ser Lys Leu Arg Arg Thr Ala Lys Thr Lys Gly His Ser Tyr Pro Pro
 100 105 110
 Gly Pro Pro Asp Val Ser Arg Leu Arg Arg Cys Xaa Lys Arg Cys Ser
 115 120 125
 Glu Gly Arg Gly Pro Thr Thr Pro Phe Ser Pro Pro Pro Ala Asp
 130 135 140
 Val Thr Cys Phe Pro Val Glu Glu Ala Ser Ala Pro Ala Ala Leu Ser
 145 150 155 160
 Ala Ser Pro Thr Gly Arg Leu Glu Pro Gly Leu Ser Ser Pro Phe Ser
 165 170 175
 Asp Leu Leu Gly Pro Leu Gly Ala Gln Ala Asp Glu Ala Gly Cys Xaa

Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala
 1 5 10 15
 Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln Leu Glu Lys Leu Lys Glu
 20 25 30
 Val Val His Phe Gln Arg Glu Lys Asp Asp Ala Ser Glu
 35 40 45

<210> 117
 <211> 45
 <212> PRT
 <213> Homo sapiens

<400> 117
 Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala
 1 5 10 15
 Gln Gln Arg Cys Arg Arg Gln Glu Arg Gln Leu Glu Lys Leu Lys Glu
 20 25 30
 Val Val His Phe Gln Lys Glu Lys Asp Asp Val Ser Glu
 35 40 45

<210> 118
 <211> 342
 <212> PRT
 <213> Homo sapiens

<400> 118
 Met Ala Thr Gly Gly Tyr Arg Thr Ser Ser Gly Leu Gly Gly Ser Thr
 1 5 10 15
 Thr Asp Phe Leu Glu Glu Trp Lys Ala Lys Arg Glu Lys Met Arg Ala
 20 25 30
 Lys Gln Asn Pro Pro Gly Pro Ala Pro Pro Gly Gly Gly Ser Ser Asp
 35 40 45
 Ala Ala Gly Lys Pro Pro Ala Gly Ala Leu Gly Thr Pro Ala Ala Ala
 50 55 60
 Ala Ala Asn Glu Leu Asn Asn Leu Pro Gly Gly Ala Pro Ala Ala
 65 70 75 80
 Pro Ala Val Pro Gly Pro Gly Gly Val Asn Cys Ala Val Gly Ser Ala
 85 90 95
 Met Leu Thr Arg Ala Pro Pro Ala Arg Gly Pro Arg Arg Ser Glu Asp
 100 105 110
 Glu Pro Pro Ala Ala Ser Ala Ser Ala Ala Pro Pro Pro Gln Arg Asp
 115 120 125
 Glu Glu Glu Pro Asp Gly Val Pro Glu Lys Gly Lys Ser Ser Gly Pro
 130 135 140
 Ser Ala Arg Lys Gly Lys Gly Gln Ile Glu Lys Arg Lys Leu Arg Glu
 145 150 155 160
 Lys Arg Arg Ser Thr Gly Val Val Asn Ile Pro Ala Ala Glu Cys Leu
 165 170 175
 Asp Glu Tyr Glu Asp Asp Glu Ala Gly Gln Lys Glu Arg Lys Arg Glu
 180 185 190
 Asp Ala Ile Thr Gln Gln Asn Thr Ile Gln Asn Glu Ala Val Asn Leu
 195 200 205
 Leu Asp Pro Gly Ser Ser Tyr Leu Leu Gln Glu Pro Pro Arg Thr Val
 210 215 220
 Ser Gly Arg Tyr Lys Ser Thr Thr Ser Val Ser Glu Glu Asp Val Ser

225 230 235 240
 Ser Arg Tyr Ser Arg Thr Asp Arg Ser Gly Phe Pro Arg Tyr Asn Arg
 245 250 255
 Asp Ala Asn Val Ser Gly Thr Leu Val Ser Ser Ser Thr Leu Glu Lys
 260 265 270
 Lys Ile Glu Asp Leu Glu Lys Glu Val Val Thr Glu Arg Gln Glu Asn
 275 280 285
 Leu Arg Leu Val Arg Leu Met Gln Asp Lys Glu Glu Met Ile Gly Lys
 290 295 300
 Leu Lys Glu Glu Ile Asp Leu Leu Asn Arg Asp Leu Asp Asp Ile Glu
 305 310 315 320
 Asp Glu Asn Glu Gln Leu Lys Gln Glu Asn Lys Thr Leu Leu Lys Val
 325 330 335
 Val Gly Gln Leu Thr Arg
 340

<210> 119
 <211> 134
 <212> PRT
 <213> Homo sapiens

<400> 119
 Met Ala Gln Ser Leu Ala Leu Ser Leu Leu Ile Leu Val Leu Ala Phe
 1 5 10 15
 Gly Ile Pro Arg Thr Gln Gly Ser Asp Gly Gly Ala Gln Asp Cys Cys
 20 25 30
 Leu Lys Tyr Ser Gln Arg Lys Ile Pro Ala Lys Val Val Arg Ser Tyr
 35 40 45
 Arg Lys Gln Glu Pro Ser Leu Gly Cys Ser Ile Pro Ala Ile Leu Phe
 50 55 60
 Leu Pro Arg Lys Arg Ser Gln Ala Glu Leu Cys Ala Asp Pro Lys Glu
 65 70 75 80
 Leu Trp Val Gln Gln Leu Met Gln His Leu Asp Lys Thr Pro Ser Pro
 85 90 95
 Gln Lys Pro Ala Gln Gly Cys Arg Lys Asp Arg Gly Ala Ser Lys Thr
 100 105 110
 Gly Lys Lys Gly Lys Gly Ser Lys Gly Cys Lys Arg Thr Glu Arg Ser
 115 120 125
 Gln Thr Pro Lys Gly Pro
 130

<210> 120
 <211> 766
 <212> PRT
 <213> Drosophila melanogaster

<400> 120
 Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu
 1 5 10 15
 Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser
 20 25 30
 Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe
 35 40 45
 Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys
 50 55 60

Arg	Arg	Arg	Leu	Asn	Ala	Asp	Ala	Val	Pro	Ser	Lys	Val	Ile	Glu	Pro
65				70					75					80	
Glu	Pro	Glu	Lys	Ile	Lys	Glu	Gly	Tyr	Thr	Ser	Gly	Ser	Thr	Gln	Thr
			85					90					95		
Glu	Ser	Cys	Ser	Leu	Phe	Asn	Glu	Asn	Lys	Ser	Leu	Arg	Glu	Lys	Ile
		100					105					110			
Arg	Thr	Leu	Glu	Tyr	Glu	Met	Arg	Arg	Leu	Glu	Gln	Gln	Leu	Arg	Glu
	115					120					125				
Ser	Gln	Gln	Leu	Glu	Glu	Ser	Leu	Arg	Lys	Ile	Phe	Thr	Asp	Thr	Gln
130					135					140					
Ile	Arg	Ile	Leu	Lys	Asn	Gly	Gly	Gln	Arg	Ala	Thr	Phe	Asn	Ser	Asp
145				150					155					160	
Asp	Ile	Ser	Thr	Ala	Ile	Cys	Leu	His	Thr	Ala	Gly	Pro	Arg	Ala	Tyr
			165					170					175		
Asn	His	Leu	Tyr	Lys	Lys	Gly	Phe	Pro	Leu	Pro	Ser	Arg	Thr	Thr	Leu
	180						185					190			
Tyr	Arg	Trp	Leu	Ser	Asp	Val	Asp	Ile	Lys	Arg	Gly	Cys	Leu	Asp	Val
	195					200					205				
Val	Ile	Asp	Leu	Met	Asp	Ser	Asp	Gly	Val	Asp	Asp	Ala	Asp	Lys	Leu
210					215					220					
Cys	Val	Leu	Ala	Phe	Asp	Glu	Met	Lys	Val	Ala	Ala	Ala	Phe	Glu	Tyr
225				230					235					240	
Asp	Ser	Ser	Ala	Asp	Ile	Val	Tyr	Glu	Pro	Ser	Asp	Tyr	Val	Gln	Leu
			245					250					255		
Ala	Ile	Val	Arg	Gly	Leu	Lys	Lys	Ser	Trp	Lys	Gln	Pro	Val	Phe	Phe
	260						265					270			
Asp	Phe	Asn	Thr	Arg	Met	Asp	Pro	Asp	Thr	Leu	Asn	Asn	Ile	Leu	Arg
	275					280					285				
Lys	Leu	His	Arg	Lys	Gly	Tyr	Leu	Val	Val	Ala	Ile	Val	Ser	Asp	Leu
	290				295					300					
Gly	Thr	Gly	Asn	Gln	Lys	Leu	Trp	Thr	Glu	Leu	Gly	Ile	Ser	Glu	Ser
305			310						315					320	
Lys	Thr	Trp	Phe	Ser	His	Pro	Ala	Asp	Asp	His	Leu	Lys	Ile	Phe	Val
			325					330					335		
Phe	Ser	Asp	Thr	Pro	His	Leu	Ile	Lys	Leu	Val	Arg	Asn	His	Tyr	Val
	340						345					350			
Asp	Ser	Gly	Leu	Thr	Ile	Asn	Gly	Lys	Lys	Leu	Thr	Lys	Lys	Thr	Ile
	355					360					365				
Gln	Glu	Ala	Leu	His	Leu	Cys	Asn	Lys	Ser	Asp	Leu	Ser	Ile	Leu	Phe
	370				375					380					
Lys	Ile	Asn	Glu	Asn	His	Ile	Asn	Val	Arg	Ser	Leu	Ala	Lys	Gln	Lys
385			390						395					400	
Val	Lys	Leu	Ala	Thr	Gln	Leu	Phe	Ser	Asn	Thr	Thr	Ala	Ser	Ser	Ile
			405					410					415		
Arg	Arg	Cys	Tyr	Ser	Leu	Gly	Tyr	Asp	Ile	Glu	Asn	Ala	Thr	Glu	Thr
	420					425						430			
Ala	Asp	Phe	Phe	Lys	Leu	Met	Asn	Asp	Trp	Phe	Asp	Ile	Phe	Asn	Ser
	435					440					445				
Lys	Leu	Ser	Thr	Ser	Asn	Cys	Ile	Glu	Cys	Ser	Gln	Pro	Tyr	Gly	Lys
	450				455					460					
Gln	Leu	Asp	Ile	Gln	Asn	Asp	Ile	Leu	Asn	Arg	Met	Ser	Glu	Ile	Met
465				470					475					480	
Arg	Thr	Gly	Ile	Leu	Asp	Lys	Pro	Lys	Arg	Leu	Pro	Phe	Gln	Lys	Gly
			485					490					495		
Ile	Ile	Val	Asn	Asn	Ala	Ser	Leu	Asp	Gly	Leu	Tyr	Lys	Tyr	Leu	Gln
	500						505				510				
Glu	Asn	Phe	Ser	Met	Gln	Tyr	Ile	Leu	Thr	Ser	Arg	Leu	Asn	Gln	Asp

515		520		525
Ile Val Glu His Phe Phe Gly Ser Met Arg Ser Arg Gly Gly Gln Phe				
530		535		540
Asp His Pro Thr Pro Leu Gln Phe Lys Tyr Arg Leu Arg Lys Tyr Ile				
545		550		555
Ile Ala Arg Asn Thr Glu Met Leu Arg Asn Ser Gly Asn Ile Glu Glu				560
		565		570
Gly Met Thr Asn Leu Lys Glu Cys Val Asn Lys Asn Val Ile Pro Asp				575
		580		585
Asn Ser Glu Ser Trp Leu Asn Leu Asp Phe Ser Ser Lys Glu Asn Glu				590
		595		600
Asn Lys Ser Lys Asp Asp Glu Pro Val Asp Asp Glu Pro Val Asp Glu				605
		610		615
Met Leu Ser Asn Ile Asp Phe Thr Glu Met Asp Glu Leu Thr Glu Asp				620
625		630		635
Ala Met Glu Tyr Ile Ala Gly Tyr Val Ile Lys Lys Leu Arg Ile Ser				640
		645		650
Asp Lys Val Lys Glu Asn Leu Thr Phe Thr Tyr Val Asp Glu Val Ser				655
		660		665
His Gly Gly Leu Ile Lys Pro Ser Glu Lys Phe Gln Glu Lys Leu Lys				670
		675		680
Glu Leu Glu Cys Ile Phe Leu His Tyr Thr Asn Asn Asn Asn Phe Glu				685
		690		695
Ile Thr Asn Asn Val Lys Glu Lys Leu Ile Leu Ala Ala Arg Asn Val				700
705		710		715
Asp Val Asp Lys Gln Val Lys Ser Phe Tyr Phe Lys Ile Arg Ile Tyr				720
		725		730
Phe Arg Ile Lys Tyr Phe Asn Lys Lys Ile Glu Ile Lys Asn Gln Lys				735
		740		745
Gln Lys Leu Ile Gly Asn Ser Lys Leu Leu Lys Ile Lys Leu				750
		755		760
				765

<210> 121
 <211> 103
 <212> PRT
 <213> Homo sapiens

<400> 121

Asp Glu Leu Cys Val Val Cys Gly Asp Lys Ala Thr Gly Tyr His Tyr	
1	5
Arg Cys Ile Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Thr Ile	10
	20
Gln Lys Asn Leu His Pro Ser Tyr Ser Cys Lys Tyr Glu Gly Lys Cys	25
	30
	35
Val Ile Asp Lys Val Thr Arg Asn Gln Cys Gln Glu Cys Arg Phe Lys	40
	45
	50
Lys Cys Ile Tyr Val Gly Met Ala Thr Asp Leu Val Leu Asp Asp Ser	55
65	60
Lys Arg Leu Ala Lys Arg Lys Leu Ile Glu Glu Asn Arg Glu Lys Arg	65
	70
	75
	80
	85
Arg Arg Glu Glu Leu Glu Lys	90
	95
	100

<210> 122
 <211> 81

<212> PRT

<213> Homo sapiens

<400> 122

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Met Lys Pro Ala Arg Pro Cys Leu Val Cys Ser Asp Glu Ala Ser Gly
 1           5           10           15
Cys His Tyr Gly Val Leu Thr Cys Gly Ser Cys Lys Val Phe Phe Lys
      20           25           30
Arg Ala Val Glu Gly Gln His Asn Tyr Leu Cys Ala Gly Arg Asn Asp
      35           40           45
Cys Ile Ile Asp Lys Ile Arg Arg Lys Asn Cys Pro Ala Cys Arg Tyr
      50           55           60
Arg Lys Cys Leu Gln Ala Gly Met Asn Leu Glu Ala Arg Lys Thr Lys
65           70           75           80
Lys
```

<210> 123

<211> 89

<212> PRT

<213> Homo sapiens

<400> 123

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Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1           5           10           15
Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
      20           25           30
Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr
      35           40           45
Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
      50           55           60
Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
65           70           75           80
Phe Leu Cys Thr Glu Pro His Asp Lys
      85
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<210> 124

<211> 85

<212> PRT

<213> Drosophila melanogaster

<400> 124

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Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu
 1           5           10           15
Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser
      20           25           30
Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe
      35           40           45
Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys
      50           55           60
Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro
65           70           75           80
Glu Pro Glu Lys Ile
      85
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<210> 125
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> THAP Domain consensus

<221> UNSURE
 <222> 2-3, 7, 9, 13-17, 19, 21-23, 25-26, 28, 35, 38-39, 41, 45-50,
 52, 55-56
 <223> Xaa = any of the twenty amino acids

<400> 125
 Met Val Xaa Xaa Cys Ser Xaa Tyr Xaa Cys Lys Asn Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Lys Xaa Val Xaa Xaa Xaa Lys Xaa Xaa Leu Xaa Arg Pro Ser Leu
 20 25 30
 Cys Lys Xaa Trp Glu Xaa Xaa Val Xaa Arg Lys Asn Xaa Xaa Xaa Xaa
 35 40 45
 Xaa Xaa Ser Xaa Ile Cys Xaa Xaa His Phe
 50 55

<210> 126
 <211> 89
 <212> PRT
 <213> Homo sapiens

<400> 126
 Met Val Gln Ser Cys Ser Ala Tyr Gly Cys Lys Asn Arg Tyr Asp Lys
 1 5 10 15
 Asp Lys Pro Val Ser Phe His Lys Phe Pro Leu Thr Arg Pro Ser Leu
 20 25 30
 Cys Lys Glu Trp Glu Ala Ala Val Arg Arg Lys Asn Phe Lys Pro Thr
 35 40 45
 Lys Tyr Ser Ser Ile Cys Ser Glu His Phe Thr Pro Asp Cys Phe Lys
 50 55 60
 Arg Glu Cys Asn Asn Lys Leu Leu Lys Glu Asn Ala Val Pro Thr Ile
 65 70 75 80
 Phe Leu Cys Thr Glu Pro His Asp Lys
 85

<210> 127
 <211> 89
 <212> PRT
 <213> Homo sapiens

<400> 127
 Met Pro Lys Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser
 1 5 10 15
 Arg Arg Lys Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu
 20 25 30
 Leu Leu Lys Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro
 35 40 45

Lys Gln His Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe
 50 55 60
 Ser Ala Phe Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr
 65 70 75 80
 Val Phe Ala Phe Gln Asp Pro Thr Gln
 85

<210> 128
 <211> 90
 <212> PRT
 <213> Homo sapiens

<400> 128
 Met Pro Arg Tyr Cys Ala Ala Ile Cys Cys Lys Asn Arg Arg Gly Arg
 1 5 10 15
 Asn Asn Lys Asp Arg Lys Leu Ser Phe Tyr Pro Phe Pro Leu His Asp
 20 25 30
 Lys Glu Arg Leu Glu Lys Trp Leu Lys Asn Met Lys Arg Asp Ser Trp
 35 40 45
 Val Pro Ser Lys Tyr Gln Phe Leu Cys Ser Asp His Phe Thr Pro Asp
 50 55 60
 Ser Leu Asp Ile Arg Trp Gly Ile Arg Tyr Leu Lys Gln Thr Ala Val
 65 70 75 80
 Pro Thr Ile Phe Ser Leu Pro Glu Asp Asn
 85 90

<210> 129
 <211> 92
 <212> PRT
 <213> Homo sapiens

<400> 129
 Met Pro Lys Tyr Cys Arg Ala Pro Asn Cys Ser Asn Thr Ala Gly Arg
 1 5 10 15
 Leu Gly Ala Asp Asn Arg Pro Val Ser Phe Tyr Lys Phe Pro Leu Lys
 20 25 30
 Asp Gly Pro Arg Leu Gln Ala Trp Leu Gln His Met Gly Cys Glu His
 35 40 45
 Trp Val Pro Ser Cys His Gln His Leu Cys Ser Glu His Phe Thr Pro
 50 55 60
 Ser Cys Phe Gln Trp Arg Trp Gly Val Arg Tyr Leu Arg Pro Asp Ala
 65 70 75 80
 Val Pro Ser Ile Phe Ser Arg Gly Pro Pro Ala Lys
 85 90

<210> 130
 <211> 90
 <212> PRT
 <213> Homo sapiens

<400> 130
 Met Val Ile Cys Cys Ala Ala Val Asn Cys Ser Asn Arg Gln Gly Lys
 1 5 10 15
 Gly Glu Lys Arg Ala Val Ser Phe His Arg Phe Pro Leu Lys Asp Ser

Met Pro Arg His Cys Ser Ala Ala Gly Cys Cys Thr Arg Asp Thr Arg
 1 5 10 15
 Glu Thr Arg Asn Arg Gly Ile Ser Phe His Arg Leu Pro Lys Lys Asp
 20 25 30
 Asn Pro Arg Arg Gly Leu Trp Leu Ala Asn Cys Gln Arg Leu Asp Pro
 35 40 45
 Ser Gly Gln Gly Leu Trp Asp Pro Ala Ser Glu Tyr Ile Tyr Phe Cys
 50 55 60
 Ser Lys His Phe Glu Glu Asp Cys Phe Glu Leu Val Gly Ile Ser Gly
 65 70 75 80
 Tyr His Arg Leu Lys Glu Gly Ala Val Pro Thr Ile Phe Glu Ser Phe
 85 90 95
 Ser

<210> 134
 <211> 92
 <212> PRT
 <213> Homo sapiens

<400> 134
 Met Thr Arg Ser Cys Ser Ala Val Gly Cys Ser Thr Arg Asp Thr Val
 1 5 10 15
 Leu Ser Arg Glu Arg Gly Leu Ser Phe His Gln Phe Pro Thr Asp Thr
 20 25 30
 Ile Gln Arg Ser Lys Trp Ile Arg Ala Val Asn Arg Val Asp Pro Arg
 35 40 45
 Ser Lys Lys Ile Trp Ile Pro Gly Pro Gly Ala Ile Leu Cys Ser Lys
 50 55 60
 His Phe Gln Glu Ser Asp Phe Glu Ser Tyr Gly Ile Arg Arg Lys Leu
 65 70 75 80
 Lys Lys Gly Ala Val Pro Ser Val Ser Leu Tyr Lys
 85 90

<210> 135
 <211> 96
 <212> PRT
 <213> Homo sapiens

<400> 135
 Met Val Lys Cys Cys Ser Ala Ile Gly Cys Ala Ser Arg Cys Leu Pro
 1 5 10 15
 Asn Ser Lys Leu Lys Gly Leu Thr Phe His Val Phe Pro Thr Asp Glu
 20 25 30
 Asn Ile Lys Arg Lys Trp Val Leu Ala Met Lys Arg Leu Asp Val Asn
 35 40 45
 Ala Ala Gly Ile Trp Glu Pro Lys Lys Gly Asp Val Leu Cys Ser Arg
 50 55 60
 His Phe Lys Lys Thr Asp Phe Asp Arg Ser Ala Pro Asn Ile Lys Leu
 65 70 75 80
 Lys Pro Gly Val Ile Pro Ser Ile Phe Asp Ser Pro Tyr His Leu Gln
 85 90 95

<210> 136

<211> 90
 <212> PRT
 <213> Homo sapiens

<400> 136
 Met Pro Gly Phe Thr Cys Cys Val Pro Gly Cys Tyr Asn Asn Ser His
 1 5 10 15
 Arg Asp Lys Ala Leu His Phe Tyr Thr Phe Pro Lys Asp Ala Glu Leu
 20 25 30
 Arg Arg Leu Trp Leu Lys Asn Val Ser Arg Ala Gly Val Ser Gly Cys
 35 40 45
 Phe Ser Thr Phe Gln Pro Thr Thr Gly His Arg Leu Cys Ser Val His
 50 55 60
 Phe Gln Gly Gly Arg Lys Thr Tyr Thr Val Arg Val Pro Thr Ile Phe
 65 70 75 80
 Pro Leu Arg Gly Val Asn Glu Arg Lys Val
 85 90

<210> 137
 <211> 90
 <212> PRT
 <213> Homo sapiens

<400> 137
 Met Pro Ala Arg Cys Val Ala Ala His Cys Gly Asn Thr Thr Lys Ser
 1 5 10 15
 Gly Lys Ser Leu Phe Arg Phe Pro Lys Asp Arg Ala Val Arg Leu Leu
 20 25 30
 Trp Asp Arg Phe Val Arg Gly Cys Arg Ala Asp Trp Tyr Gly Gly Asn
 35 40 45
 Asp Arg Ser Val Ile Cys Ser Asp His Phe Ala Pro Ala Cys Phe Asp
 50 55 60
 Val Ser Ser Val Ile Gln Lys Asn Leu Arg Phe Ser Gln Arg Leu Arg
 65 70 75 80
 Leu Val Ala Gly Ala Val Pro Thr Leu His
 85 90

<210> 138
 <211> 85
 <212> PRT
 <213> Drosophila melanogaster

<400> 138
 Met Lys Tyr Cys Lys Phe Cys Cys Lys Ala Val Thr Gly Val Lys Leu
 1 5 10 15
 Ile His Val Pro Lys Cys Ala Ile Lys Arg Lys Leu Trp Glu Gln Ser
 20 25 30
 Leu Gly Cys Ser Leu Gly Glu Asn Ser Gln Ile Cys Asp Thr His Phe
 35 40 45
 Asn Asp Ser Gln Trp Lys Ala Ala Pro Ala Lys Gly Gln Thr Phe Lys
 50 55 60
 Arg Arg Arg Leu Asn Ala Asp Ala Val Pro Ser Lys Val Ile Glu Pro
 65 70 75 80
 Glu Pro Glu Lys Ile
 85

<210> 139
 <211> 63
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> THAP Domain consensus

<221> UNSURE
 <222> 4-5, 7, 9-10, 12, 15-20, 22, 24, 32, 35, 38-39, 42-43, 46-47,
 49-51, 53-61, 63
 <223> Xaa = any of the twenty amino acids

<400> 139
 Met Pro Lys Xaa Xaa Cys Xaa Ala Xaa Xaa Cys Xaa Asn Arg Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Lys Xaa Lys Xaa Val Ser Phe His Lys Phe Pro Xaa
 20 25 30
 His Asp Xaa His Asp Xaa Xaa Arg Arg Xaa Xaa Trp Val Xaa Xaa Val
 35 40 45
 Xaa Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Xaa
 50 55 60

<210> 140
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DR-5-related sequence

<400> 140
 gggcatacta ctggcaa 17

<210> 141
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DR-5-related sequence

<400> 141
 gggcaaaactg tgggcat 17

<210> 142
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DR-5-related sequence

<400> 142

gggcatacta ctggcaa	17
<210> 143	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 143	
gggcaaaacta ctggcaa	17
<210> 144	
<211> 17	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 144	
gggccagttc gttgcaa	17
<210> 145	
<211> 16	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 145	
gggcatgtac tggcaa	16
<210> 146	
<211> 16	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 146	
gggcaactgt gggcaa	16
<210> 147	
<211> 18	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DR-5-related sequence	
<400> 147	
gggcaacact actggcaa	18

<210> 148
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DR-5-related sequence

 <400> 148
 gggcaaagta ctggcaa 17

 <210> 149
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DR-5 consensus sequence

 <221> unsure
 <222> 7-11
 <223> n = any of the four nucleotides

 <400> 149
 gggcaannnn ntggcaa 17

 <210> 150
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> ER-11-related sequence

 <400> 150
 ttgccagtac taagtgtggg caa 23

 <210> 151
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> ER-11-related sequence

 <400> 151
 ctgccagtac atagtgtggg caa 23

 <210> 152
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> ER-11-related sequence

 <400> 152

ttgccagtac taagtgtggg caa	23
<210> 153	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 153	
ctgccagtag atactgtggg caa	23
<210> 154	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 154	
ttgccagtag ttaggtgtgg gcga	24
<210> 155	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 155	
ttgccagtag ttagtgtggg caa	23
<210> 156	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 156	
ttgccagtac ctactaaggg caa	23
<210> 157	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> ER-11-related sequence	
<400> 157	
ttgccagtag ttagtgtggg cag	23

<210> 158
 <211> 23
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> ER-11-related sequence

<400> 158
 ctgccagtag taagtgtggg cag 23

<210> 159
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> ER-11 consensus sequence

<221> unsure
 <222> 7-17
 <223> n = any of the four nucleotides

<400> 159
 ttgccannnn nnnnnnnggg caa 23

<210> 160
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 160
 atggtgcagt cctgctccgc ctacggctgc aagaaccgct acgacaagga caagcccgtt 60
 tctttccaca agtttctct tactcgacce agtctttgta aagaatggga ggcagctgtc 120
 agaagaaaaa actttaaaacc caccaagtat agcagtattt gttcagagca ctttactcca 180
 gactgcttta agagagagtg caacaacaag ttactgaaag agaatgctgt gccacaata 240
 tttctttgta ctgagccaca tgacaagaaa gaagatcttc tggagccaca ggaacagctt 300
 cccccacctc ctttaccgcc tctgtttcc caggttgatg ctgctattgg attactaatg 360
 ccgctctctc agaccctctg taatctctca gttttctgtg accacaacta tactgtggag 420
 gatacaatgc accagcgga aaggattcat cagctagaac agcaagtga aaaactcaga 480
 aagaagctca agaccgcaca gcagcgatgc agaaggcaag aacggcagct tgaataatta 540
 aaggagggtg ttcaactcca gaaagagaaa gacgacgtat cagaaagagg ttatgtgatt 600
 ctaccaaatg actactttga aatagttgaa gtaccagcat aa 642

<210> 161
 <211> 687
 <212> DNA
 <213> Homo sapiens

<400> 161
 atgccgacca attgcgctgc ggcgggctgt gccactacct acaacaagca cattaacatc 60
 agcttccaca ggtttccttt ggatcctaaa agaagaaaag aatgggttcg cctgggttagg 120
 cgcaaaaatt ttgtgccagg aaaacacact tttctttgtt caaagcactt tgagcctcc 180
 tgttttgacc taacaggaca aactcgacga cttaaaatgg atgctgttcc aaccattttt 240
 gatttttgta cccatataaa gtctatgaaa ctcaagtcaa ggaatctttt gaagaaaaac 300
 aacagttggt ctccagctgg accatctaatt ttaaaatcaa acattagtag tcagcaagta 360
 ctacttgaac acagctatgc ctttaggaat cctatggagg caaaaagag gatcattaaa 420

ctgaaaaag	aaatagcaag	cttaagaaga	aaaatgaaaa	cttgcctaca	aaaggaacgc	480
agagcaactc	gaagatggat	caaagccacg	tgtttggtta	agaatttaga	agcaaatagt	540
gtattacctc	aaggtacatc	agaacacatg	ttaccaactg	ccttaagcag	tcttcctttg	600
gaagatttta	agatccttga	acaagatcaa	caagataaaa	cactgctaag	tctaaatcta	660
aaacagacca	agagtacctt	catttaa				687

<210> 162
 <211> 720
 <212> DNA
 <213> Homo sapiens

<400> 162

atgccgaagt	cgtgcgcggc	ccggcagtg	tgcaaccgct	acagcagccg	caggaagcag	60
ctcaccttcc	accggtttcc	gttcagccgc	ccggagctgc	tgaaggaatg	ggtgctgaac	120
atcgcccgccg	gcaacttcaa	gcccagcag	cacacggtca	tctgctccga	gcacttccgg	180
ccagagtgtc	tcagcgctt	tggaaaccgc	aagaacctaa	agcacaatgc	cgtgccccacg	240
gtgttcgcct	ttcaggaccc	cacacagcag	gtgaggggaga	acacagaccc	tgccagtgcg	300
agaggaaatg	ccagctcttc	tcagaaagaa	aaggtcctcc	ctgaggccggg	ggccggagag	360
gacagtctcg	ggagaaacat	ggacactgca	cttgaagagc	ttcagttgcc	cccaaagtc	420
gaagggccacg	taaaacaggt	ctcgccacgc	aggccgcaag	caacagaggg	tggtggccgg	480
ccgactggcc	ctgcagcgct	gagaaggacc	cccaacaagc	agccatctga	tcacagctat	540
gcccttttgg	acttagatcc	cctgaagaaa	aaactcttcc	tcactctgaa	ggaaaatgaa	600
aagctccgga	agcgcttgca	ggcccagagg	ctggtgatgc	gaaggtatgc	cagccgcctc	660
cgtgcttgca	aagggcacca	gggactccag	gccagacttg	ggccagagca	gcagagctga	720

<210> 163
 <211> 1734
 <212> DNA
 <213> Homo sapiens

<400> 163

atggtgatct	gctgtgcggc	cgtgaactgc	tccaaccggc	agggaaaggg	cgagaagcgc	60
gccgtctcct	tcacacaggt	ccccctaaag	gactcaaaac	gtctaataca	atggttaaaa	120
gctgttcaga	gggataactg	gactcccaact	aagtattcat	ttctctgtag	tgagcatttc	180
accaaagaca	gcttctccaa	gaggctggag	gaccagcatc	gcctgctgaa	gcccacggcc	240
gtgccatcca	tcttccacct	gaccgagaag	aagagggggg	ctggaggcca	tgcccgacc	300
cggagaaaag	atgccagcaa	ggccacaggg	ggtgtgaggg	gacactcgag	tgcccgccacc	360
ggcagaggag	ctgcaggttg	gtcaccgtcc	tcgagtggaa	acccgatggc	caagccagag	420
tcccgcaggt	tgaagcaagc	tgctctgcaa	ggtgaagcca	cacccagggc	ggcccaggag	480
gccgcagccc	aggagcaggg	ccagcaagct	ctggaacgga	ctccaggaga	tggaactggc	540
accatggtgg	caggcagtc	gggaaaagca	gaagcgtctg	ccacagatgc	tgccgatgag	600
agcgccactt	cctccatcga	agggggcgctg	acagataaga	gtggcatttc	tatggatgac	660
tttacgcccc	caggatctgg	ggcgtgcaaa	tttatcggtc	cacttccattc	gtacagtttc	720
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<400> 164

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<400> 166

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cagaccctcg	ataacctgtc
caccagagga	agaggatcct
aagacggccc	agcagcggtg
gtccactttc	agagagagaa
gactactttg	aaattgttga
ctacggctgc	aagaaccgct
tactcgcccc	agcctttgta
caccaagtac	agcagcatct
caacaacaag	ctactgaagg
tgagaagaag	gaagacctgg
ccaggttgat	gctgctattg
gggtttctgt	gaccacaatt
acactgtgga	ggatacagtg
agaaaactcag	gaagaagctc
tcgagaagct	caaggaaagt
tccgagaggg	gctacgtgat
tga	
	60
	120
	180
	240
	300
	360
	420
	480
	540
	600
	633

<210> 173
 <211> 654
 <212> DNA
 <213> Mus musculus

<400> 173	
atgccgacca	attgcgccgc
agcttccaca	ggtttctctt
cgcaaaaatt	ttgtgccagg
tgttttgatc	taacaggaca
gattttttgta	ccatatataa
aacagttttc	ctccaactgg
cttgaacaca	ggtatgcctt
gaaaaggaaa	tagcaagctt
gcaactcgaa	ggtggatcaa
ctacctaaag	gcatctcaga
gatttaaaaa	gtcttgaaca
ggcgggctgt	gctgctacct
ctctctgaaa	ctcaagtcaa
tttaaagtga	acgggcagtca
gcttgcaag	agaacgcaga
gcttagaagc	aagtaacatg
taagcaatct	tcctctggaa
ctaa	
	60
	120
	180
	240
	300
	360
	420
	480
	540
	600
	654

<210> 174
 <211> 657
 <212> DNA
 <213> Mus musculus

<400> 174
 atgccgaagt cttgcgcggc cgggcaatgc tgcaaccgct acagcagccg caggaagcag 60
 ctacaccttc accggttccc cttcagccgc cggagctgt tgaggagtg ggtgctcaac 120
 atcgccggg ctgacttcaa gcctaagcag cacacagtca tctgctcgga acacttcaga 180
 ccgagtgct tcagcgcctt tgggaaccgc aagaacctga aacacaatgc tgtgcccacg 240
 gtgttcgctt ttcagaaccc cacagaggtc tgccctgagg tgggggctgt tggggacagc 300
 tcaggaggga acatggacac cacactggaa gaacttcagc ctccaaaccc ggaaggcccc 360
 gtgcagcagg tcttaccaga tcgagaagca atggaggcca cggaggccgc tggcctgcct 420
 gccagccctc tggggttgaa gagggccctt cggggacagc cgtctgatca cagttatgcc 480
 ctttcggact tggataccct caaaaaaaaa ctctttctca cactgaagg aaacaagagg 540
 cttcggaagc ggctgaaagc ccagaggctg ctgttgcgga ggacatgtgg ccgcctgaga 600
 gcctacagag agggacagcc gggacctcgg gccagacgpc cggcacaggg aagctga 657

<210> 175
 <211> 558
 <212> DNA
 <213> Mus musculus

<400> 175
 atactgcaag catttggaag cctaaaaaaaa ggagatgtgc tgtgttcaag acacttcaag 60
 aagacagact ttgacagaag cactctaacc actaagctga aggcaggagc catcccttct 120
 atctttgaat gtccatatca cttacaggag aaaagagaaa aacttccact tagaaaaaac 180
 ttccttctca aaacctctcc catcacccac catggccgcc agcttgttgg tgccctctgc 240
 attgaagaat tcgaacccca gttcattttt gaacatagct acagtgttat ggacagccca 300
 aagaagctta agcataagct agaccgtgtg atcatcgagc tggagaatac caaggaaagc 360
 ctacgggaatg ttttagcccg agaaaaaac tttcaaaagt cactgaggaa gacaatcatg 420
 gaactaaagg atgaaagtct gatcagccag gaaacagcca atagtctggg tgctttctgt 480
 tgggagtgct atcatgaaag cacagcagga ggctgtagtt gtgaagtcac ttcttatatg 540
 cttcatctgc agttgaca 558

<210> 176
 <211> 1719
 <212> DNA
 <213> Homo sapiens

<400> 176
 ctttcgcgcg ggcggaagag cgcgcgccag cttcggcaca cttgggagcc ggateccagc 60
 cctacgcctc gtcccttaca agctcctcca agccccgcc gctgctgtgg gagcgcgggc 120
 cgtcctctcc tggaggtcgt ctcttgccat cctcggggcc gcaggaagga agaggaggca 180
 gcggccggag ccctgggtgg cggcctgagg tgagagcccg accggccctc ttggggaatat 240
 ggcgacgggt ggctaccgga ccagcagcgg cctcggcggc agcaccacag acttcttgga 300
 ggagtggaa ggcgaacgcg agaagatcgc cgccaagcag aacccccgg gcccgcccc 360
 ccggggagg ggcagcagcg acgcccgtgg gaagcccccc gcgggggctc tgggaccccc 420
 ggcggccgcg gctgccaacg agctcaacaa caacctccc ggccggcgcc cggccgcacc 480
 tgcctccccc ggtcccgggg gcgtgaactg cgcggtcggc tccgccatgc tgacgcgggc 540
 gcccccggcc cgcggccccc ggcggtcggg ggacgagccc ccagccgcct ctgcctcggc 600
 tgcaccgcgg ccccgagctg acgaggagga gccggacggc gtcccagaga agggcaagag 660
 ctcgggcccc agtgccagga aagcgaagg gcagatcgag aagaggaagc tgcgggagaa 720
 gcggcgctcc accggcgctg tcaacatccc tgccgcagag tgcttagatg agtacgagaa 780
 tgatgaagca ggcagaaag agcggaaaag agaagatgca attacacaac agaacactat 840
 tcagaatgaa gctgtaaaact tactagatcc aggcagttcc tatctgtac agggaccacc 900
 tagaagcagtt tcaggcagat ataaaaagc aaccagtgct tctgaagaag atgtctcaag 960
 tagatattct cgaacagata gaagtgggtt ccctagatat aacagggatg caaatgtttc 1020
 aggtactctg gtttcaagta gcacactgga aaagaaaatt gaagatcttg aaaaggaagt 1080
 agtaacagaa agacaagaaa acctaaagact tgtgagactg atgcaagata aagaggaaat 1140
 gattggaaaa ctcaaagaag aaattgattt attaaataga gacctagatg acatagaaga 1200
 tgaaaatgaa cagctaaagc aggaaaataa aactcttttg aaagtgtggt gtcagctgac 1260

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caggttagagg attcaagact caatgtggaa aaaatatttt aaactactga ttgaatgtta 1320
atggtcaatg ctagcacaat attcctatgc tgcaatacat taaaataact aagcaagtat 1380
atttatttct agcaaacaga tgtttgtttt caaaataactt ctttttcatt attgggttta 1440
aaaaagcatt atccttttat ctcaaaata agtaatatct ttcagttatt aaatgataga 1500
taatgccttt ttggttttgt gtggtattca actaatacat ggtttaaagt cacagccgtt 1560
tgaatatatt ttatctttgt agtacatttt ctccttagg aatatacata gtctttgttt 1620
acatgagttc caatactttt gggatgttac cctcacatgt ccttatactg atgtgtgcca 1680
ccttttatgt gttgatgact cactcataag gtttttggtc 1719

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<210> 177
<211> 878
<212> DNA
<213> Homo sapiens

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<400> 177
atcccagccc acgcacagac ccccaacttg cagctgcccc cctcacccctc agctctggcc 60
tcttactcac cctctaccac agacatggct cagtcactgg ctctgagcct ccttatcctg 120
gttctggcct ttggcatccc caggacccaa ggcagtgatg gaggggctca ggactgttgc 180
ctcaagtaca gccaaaggaa gattcccccc aaggttgctc gcagctaccg gaagcaggaa 240
ccaagcttag gctgctccat cccagctatc ctgttcttgc cccgcaagcg ctctcaggca 300
gagctatgtg cagacccaaa ggagctcttg gtgcagcagc tgatgcagca tctggacaag 360
acaccatccc cacagaaacc agcccagggc tgcaggaagg acaggggggc ctccaagact 420
ggcaagaaag gaaagggctc caaaggctgc aagaggactg agcggtcaca gaccctaaa 480
gggccatagc ccagtgcagc gcctggagcc ctggagacc caccagcctc accagcgtt 540
gaagcctgaa cccaagatgc aagaaggagg ctatgctcag gggccctgga gcagccacc 600
catgctggcc ttgccacact ctttctcctg ctttaaccac cccatctgca ttcccagctc 660
taccctgcat ggctgagctg cccacagcag gccaggtcca gagagaccga ggaggagag 720
tctcccaggg agcatgagag gaggcagcag gactgtcccc ttgaaggaga atcatcagga 780
ccttggaact gatacggctc cccagtacac cccacctctt ccttgtaaat atgatttata 840
cctaactgaa taaaagctg ttctgtcttc ccacccaa 878

```

```

<210> 178
<211> 34
<212> PRT
<213> Artificial Sequence

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```

<220>
<223> Interferon gamma homology motif of THAP1

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<400> 178
Asn Tyr Thr Val Glu Asp Thr Met His Gln Arg Lys Arg Ile His Gln
1           5           10           15
Leu Glu Gln Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala Gln
20           25           30
Gln Arg

```

```

<210> 179
<211> 20
<212> PRT
<213> Artificial Sequence

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<220>
<223> Nuclear localization sequence of THAP1

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<400> 179

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Arg Lys Arg Ile His Gln Leu Glu Gln Gln Val Glu Lys Leu Arg Lys
 1 5 10 15
 Lys Leu Lys Thr
 20

<210> 180
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE
 <222> 3-16, 19, 23, 25-35
 <223> Xaa = any of the twenty amino acids

<221> VARIANT
 <222> 37
 <223> Xaa = Arg or Lys

<400> 180
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Gln Arg Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Gln Arg Glu
 35

<210> 181
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 181
 gaattcggcc attatggcct gcaggatccg gccgcctcgg cccaggatcc 50

<210> 182
 <211> 111
 <212> PRT
 <213> Homo sapiens

<220>

<400> 182
 Ser Asp Gly Gly Ala Gln Asp Cys Cys Leu Lys Tyr Ser Gln Arg Lys
 1 5 10 15
 Ile Pro Ala Lys Val Val Arg Ser Tyr Arg Lys Gln Glu Pro Ser Leu
 20 25 30
 Gly Cys Ser Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys Arg Ser Gln
 35 40 45
 Ala Glu Leu Cys Ala Asp Pro Lys Glu Leu Trp Val Gln Gln Leu Met

50		55		60
Gln His Leu Asp Lys Thr Pro Ser Pro Gln Lys Pro Ala Gln Gly Cys				
65	70	75	80	
Arg Lys Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser				
	85	90	95	
Lys Gly Cys Lys Arg Thr Glu Arg Ser Gln Thr Pro Lys Gly Pro				
100	105	110		

<210> 183
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 183
 gcgggatccg tagtgatgga ggggctcagg actgttg 37

<210> 184
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 184
 gcgggatccc tatggccctt taggggtctg tgacc 35

<210> 185
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 185
 ccgaattcag gatggtgcag tcctgctccg cct 33

<210> 186
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 186
 cgcggatcct gctggtactt caactatttc aaagtagtc 39

<210> 187
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

 <400> 187
 ccgaattcag gatggtgcag tcctgctccg cct 33

 <210> 188
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 188
 cgcggtaccc gctggtactt caactatttc aaagtagtc 39

 <210> 189
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 189
 gcggaattca tggcgaccgg tggtaccgg acc 33

 <210> 190
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 190
 gcgggatccc tctacctggt cagctgaccc acaac 35

 <210> 191
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 191
 ccgaattcag gatggtgcag tcctgctccg cct 33

 <210> 192
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> Primer

<400> 192

gcggtatcct gctgttactt caactatttc aaagtagtc

39

<210> 193

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 193

gcgaattcg ccatcatggg gttccctaga tataacaggg atgcaa

46

<210> 194

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 194

gccggatccg ggttccctag atataacagg gatgcaa

37

<210> 195

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 195

gcgtcttaga gccatcatgg aggagcagaa gctgatc

37

<210> 196

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 196

cttgcggccg cctctacctg gtcagctgac ccacaac

37

<210> 197

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 197
 gcggaattca aagaagatct tctggagcca caggaac 37

 <210> 198
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 198
 gcgggatcct gctggtaatt caactatttc aaagtagtc 39

 <210> 199
 <211> 35
 <212> DNA
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 <220>
 <223> Primer

 <400> 199
 gcggaattca tgccgcctct tcagaccctt gttaa 35

 <210> 200
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 200
 gcggaattca tgcaccagcg gaaaaggatt catcag 36

 <210> 201
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 201
 ccgaattcag gatggtgcag tctgctccg cct 33

 <210> 202
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 202
 gcgggatccc ttgtcatgtg gctcagtaca aagaaatat 39

<210> 203
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 203
 cgggatcctg tgcggtcttg agcttctttc tgag

34

<210> 204
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 204
 gcgggatccg tcgtctttct ctttctggaa gtgaac

36

<210> 205
 <211> 36
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE
 <222> 3-14, 17, 21, 23-33, 35
 <223> Xaa = any of the twenty amino acids

<400> 205
 Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gln Arg
 1 5 10 15
 Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Gln Xaa Glu
 35

<210> 206
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 206
 ccgcacagca gcgatgcgct gctcaagaac ggcagcttg

39

<210> 207
 <211> 39

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 207
 caagctgccg ttcttgagca gcgcacgcgt gctgtgcgg 39

 <210> 208
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 208
 gctcaagacc gcacagcaag aacggcagct tg 32

 <210> 209
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 209
 caagctgccg ttcttgctgt gcggtcttga gc 32

 <210> 210
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 210
 gcgggatccc taaattagaa aggggtgggg gtagcc 36

 <210> 211
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 211
 gcggaattca tggagcctgc acccgcccga tc 32

 <210> 212
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 212
 gcggaattca aagaagatct tctggagcca caggaac 37

<210> 213
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 213
 cgcggtacct gctgtactt caactatttc aaagtagtc 39

<210> 214
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 214
 cgcggtaccg tgcagtcctg ctccgcctac ggc 33

<210> 215
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 215
 ccgaattctt atgctgttac ttcaactatt tcaaagtag 39

<210> 216
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 216
 gccgaattca tgccgaactt ctgcgctgcc ccc 33

<210> 217
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Primer

<400> 217
cgcggtaccc taggttattt tccacagttt cggaattatc 40

<210> 218
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 218
gcgctgcagc aagctaaatt taaatgaagg tactcttgg 39

<210> 219
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 219
gcgagatctg ggaaatgccg accaattgcg ctgcg 35

<210> 220
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 220
agaggatcct tagctctgct gctctggccc aagtc 35

<210> 221
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 221
agagaattca tgccgaagtc gtgcgcggcc cg 32

<210> 222
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 222
 gcggaattca tgccggtca ctgctccgc gc 32

 <210> 223
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 223
 gcggggtcct caggccatgc tgctgctcag ctgc 34

 <210> 224
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 224
 gcgagatctc gatggtgaaa tgctgctccg ccattgga 38

 <210> 225
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 225
 gcggggtcct catgaaatat agtctgttc tatgctctc 39

 <210> 226
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 226
 gcgagatctc gatgcccaag tactgcaggg cgccg 35

 <210> 227
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 227
 gcggaattct tatgcactgg ggatccgagt gtccagg 37

<210> 228
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 228
gcggaattca tgccggcccg ttgtgtggcc gc

32

<210> 229
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 229
gcgggatacct taacatgttt cttctttcac ctgtacagc

39

<210> 230
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 230
gcgagatctc gatgctggc tttacgtgct gcgtgc

36

<210> 231
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 231
gcggaattct cacattccgt gcttcttgcg gatgac

36

<210> 232
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 232
ccgaattcag gatggtgcag tctgtctccg cct

33

<210> 233

<211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 233
 cgcggtacct gctggtactt caactatttc aaagtagtc 39

 <210> 234
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 234
 gcgctctaga gccatcatgg aggagcagaa gctgac 37

 <210> 235
 <211> 41
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 235
 gcgctctaga ttatgctggt acttcaacta tttcaaagta g 41

 <210> 236
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 236
 cgcggtaccg tgcagtctcg ctccgcctac ggc 33

 <210> 237
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 237
 cgcggtacct gctggtactt caactatttc aaagtagtc 39

 <210> 238
 <211> 37
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 238

gccggatccg ggttcctag atataacagg gatgcaa

37

<210> 239

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 239

gcgggatccc tctacctggt cagctgaccc acaac

35

<210> 240

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 240

gcgggatcca gtgatggagg ggctcaggac tgttg

35

<210> 241

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 241

gcgggatccc tatggccctt taggggtctg tgacc

35

<210> 242

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 242

gcgcatatgg tgcagtctg ctccgcctac ggc

33

<210> 243

<211> 36

<212> DNA

<213> Artificial Sequence

<220>
<223> Primer

<400> 243
gcgctcgagt ttcttgatcat gtggctcagt acaaag

36

<210> 244
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<221> unsure
<222> 21-45
<223> n = any of the four nucleotides

<400> 244
tgggcactat ttatatcaac nnnnnnnnnn nnnnnnnnnn nnnnnaatgt cgttggtggc 60
cc 62

<210> 245
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 245
accgcaagct tgggcactat ttatatcaac

30

<210> 246
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 246
ggtctagagg gccaccaacg catt

24

<210> 247
<211> 2173
<212> DNA
<213> Homo sapiens

<400> 247
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 <211> 1995
 <212> DNA
 <213> Homo sapiens

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 <211> 1999
 <212> DNA
 <213> Homo sapiens

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1398

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<211> 2291
<212> DNA
<213> Homo sapiens

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 <213> Homo sapiens

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<211> 986

<212> DNA

<213> Mus musculus

<400> 259

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<211> 1120
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<213> Mus musculus

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aggtgccttg aagttgggat ggttagctgc gacaggcagt tgtcgggtgg ggcccgaagt 840
actgaggagg caccgtccca ggtttcttgg gctgaggctg tcagctgtgg ggaagcagca 900

gtgaccaaat gtgagccgtc acaaccccct caagagatgc tcccagaggg agagctgggc 960
attctttacag ccggtgggggt ccttactgtc tccccatagg agccattctg atggcaggca 1020
gggcaagggt ccccgtcagc ctgtatttct gagtgactct tttttctgcc tggttcgtgt 1080
agatgtggaa taaatctttt gaagtctcca aaaaaaaaaa 1120

<210> 262
<211> 558
<212> DNA
<213> Mus musculus

<400> 262
atactgcaag catttggaag cctaaaaaaaa ggagatgtgc tgtgttcaag acacttcaag 60
aagacagact ttgacagaag cactctaaac actaagctga aggcaggagc catcccttct 120
atctttgaat gtccatatca cttacaggag aaaagagaaa aacttcaact tagaaaaaac 180
ttccttctca aaaccccttc catcacccac catggccgcc agcttgttgg tgccctctgc 240
attgaagaat tcgaacccca gttcattttt gaacatagct acagtgttat ggacagccca 300
aagaagctta agcataagct agaccgtgtg atcatcgagc tggagaatac caaggaaagc 360
ctacggaatg ttttagcccg agaaaaacac tttcaaaagt cactgaggaa gacaatcatg 420
gaactaaagg atgaaagtct gatcagccag gaaacagcca atagtctggg tgctttctgt 480
tgggagtgtc atcatgaaag cacagcagga ggctgtagtt gtgaagtcac ttcttatatg 540
cttcatctgc agttgaca 558

<210> 263
<211> 37
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus sequence for PAR4 binding domain of THAP

<221> UNSURE
<222> 3-15, 18, 22, 24-34, 36
<223> Xaa = any of the twenty amino acids

<400> 263
Leu Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gln
1 5 10 15
Arg Xaa Arg Arg Gln Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Gln Xaa Glu
35

<210> 264
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 264
ccgctcgagg tgcagtcctg ct

22

<210> 265
<211> 29
<212> DNA

<213> Artificial Sequence
 <220>
 <223> Primer
 <400> 265
 cgggatccgc tgggtacttca actatttca 29
 <210> 266
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer
 <400> 266
 ccgctcgagg atacaatgca cc 22
 <210> 267
 <211> 33
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer
 <400> 267
 gcgggatccg ctgggtacttc aactatttca aag 33
 <210> 268
 <211> 86
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic Oligonucleotide
 <400> 268
 ccgctcgagc caccatggag acagacacac tctgtctatg ggtactgctg ctctggggttc 60
 cagggtccac tggtgacctc gagatt 86
 <210> 269
 <211> 26
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Primer
 <400> 269
 tagggtcgac gccaccatgg agacag 26
 <210> 270
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Primer

<400> 270
ccgctcgagg tcaccagtgg a

21

<210> 271
<211> 134
<212> PRT
<213> Homo sapiens

<400> 271
Met Ala Gln Ser Leu Ala Leu Ser Leu Leu Ile Leu Val Leu Ala Phe
1 5 10 15
Gly Ile Pro Arg Thr Gln Gly Ser Asp Gly Gly Ala Gln Asp Cys Cys
20 25 30
Leu Lys Tyr Ser Gln Arg Lys Ile Pro Ala Lys Val Val Arg Ser Tyr
35 40 45
Arg Lys Gln Glu Pro Ser Leu Gly Cys Ser Ile Pro Ala Ile Leu Phe
50 55 60
Leu Pro Arg Lys Arg Ser Gln Ala Glu Leu Cys Ala Asp Pro Lys Glu
65 70 75 80
Leu Trp Val Gln Gln Leu Met Gln His Leu Asp Lys Thr Pro Ser Pro
85 90 95
Gln Lys Pro Ala Gln Gly Cys Arg Lys Asp Arg Gly Ala Ser Lys Thr
100 105 110
Gly Lys Lys Gly Lys Gly Ser Lys Gly Cys Lys Arg Thr Glu Arg Ser
115 120 125
Gln Thr Pro Lys Gly Pro
130

<210> 272
<211> 878
<212> DNA
<213> Homo sapiens

<400> 272
atcccagccc acgcacagac ccccaacttg cagctgccca cctcacccctc agctctggcc 60
tcttactcac cctctaccac agacatggct cagtcactgg ctctgagcct ccttatcctg 120
gttctggcct ttggcatccc caggacccaa ggcagtgatg gaggggctca ggactgttgc 180
ctcaagtaca gccaaaggaa gattccccgc aaggttgctc gcagctaccg gaagcaggaa 240
ccaagcttag gctgctccat cccagctatc ctgttcttgc cccgcaagcg ctctcaggca 300
gagctatgtg cagaccctaa ggagctctgg gtgcagcagc tgatgcagca tctggacaag 360
acaccatccc cacagaaacc agcccagggc tgcaggaagg acaggggggc ctccaagact 420
ggcaagaaag gaaagggctc caaaggctgc aagaggactg agcggtcaca gaccctaaa 480
gggcatagc ccagttagca gcctggagcc ctggagaccc caccagcctc accagcgctt 540
gaagcctgaa cccaagatgc aagaaggagg ctatgctcag gggccctgga gcagccaccc 600
catgctggcc ttgccacact ctttctcctg ctttaaccac cccatctgca ttcccagctc 660
tacctgcat ggctgagctg cccacagcag gccaggctca gagagaccga ggagggagag 720
tctcccaggg agcatgagag gaggcagcag gactgtcccc ttgaaggaga atcatcagga 780
ccctggacct gatcggctc cccagtacac cccactctt ccttgtaaat atgatttata 840
cctaactgaa taaaagctg ttctgtcttc ccacccaa 878

<210> 273
<211> 98

<212> PRT

<213> Homo sapiens

<400> 273

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Met Ala Leu Leu Ala Leu Ser Leu Leu Val Leu Trp Thr Ser Pro
 1           5           10           15
Ala Pro Thr Leu Ser Gly Thr Asn Asp Ala Glu Asp Cys Cys Leu Ser
      20           25           30
Val Thr Gln Lys Pro Ile Pro Gly Tyr Ile Val Arg Asn Phe His Tyr
      35           40           45
Leu Leu Ile Lys Asp Gly Cys Arg Val Pro Ala Val Val Phe Thr Thr
      50           55           60
Leu Arg Gly Arg Gln Leu Cys Ala Pro Pro Asp Gln Pro Trp Val Glu
65           70           75           80
Arg Ile Ile Gln Arg Leu Gln Arg Thr Ser Ala Lys Met Lys Arg Arg
      85           90           95
Ser Ser
```

<210> 274

<211> 684

<212> DNA

<213> Homo sapiens

<400> 274

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cattcccagc ctcacatcac tcacaccttg catttcaccc ctgcatccca gtgcacctgc 60
agcctcacac agatcctgca cacaccaga cagctggcgc tcacacattc accgttggcc 120
tgccctctgtt caccctccat ggccctgcta ctggccctca gctgtctggt tctctggact 180
tccccagccc caactctgag tggcaccaat gatgtgaag actgctgcct gtctgtgacc 240
cagaaaccca tcctgggta catcgtgagg aacttcact accttctcat caaggatggc 300
tgcagggtgc ctgctgtagt gtaccacaca ctgagggggc gccagctctg tgcaccccca 360
gaccagccct gggtagaacg catcatccag agactgcaga ggacctcagc caagatgaag 420
cgccgcagca gttaacctat gaccgtgcag agggagcccc gactcagagt caagcattgt 480
gaattattac ctaacctggg gaaccgagga ccagaaggaa ggaccaggct tccagctcct 540
ctgcaccaga cctgaccagc caggacaggg cctgggggtgt gtgtgagtgt gagtgtgagc 600
gagagggtga gtgtggtcag agtaaagctg ctccaccccc agattgcaat gctaccaata 660
aagccgcctg gtgtttacaa ctaa                                     684
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<210> 275

<211> 125

<212> PRT

<213> Homo sapiens

<400> 275

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Met Lys Lys Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val
 1           5           10           15
Leu Ile Gly Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser
      20           25           30
Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp
      35           40           45
Leu Lys Gln Phe Ala Pro Ser Ser Cys Glu Lys Ile Glu Ile Ile
      50           55           60
Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala
65           70           75           80
Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys
      85           90           95
```

Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys
 100 105 110
 Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr
 115 120 125

<210> 276
 <211> 2545
 <212> DNA
 <213> Homo sapiens

<400> 276
 atccaataca ggagtgactt ggaactccat tctatcacta tgaagaaaaa tgggtgttctt 60
 ttctctcttg gcatcatctt gctggttctg attggagtgc aaggaacccc agtagtgaga 120
 aagggtgcgt gttcctgcat cagcaccaac caagggacta tccacctaca atccttgaaa 180
 gaccttaaac aatttgcccc aagcccttcc tgcgagaaaa ttgaaatcat tgctacactg 240
 aagaatggag ttcaaacatg tctaaaccca gattcagcag atgtgaagga actgattaaa 300
 aagtgaggaga aacaggtcag ccaaaagaaa aagcaaaaaga atgggaaaaa acatcaaaaa 360
 aagaaagttc tgaaggttcg aaaatctcaa cgttctcgtc aaaagaagac tacataagag 420
 accacttcac caataagtat tctgtgttaa aaatgttcta ttttaattat accgctatca 480
 ttccaaagga ggatggcata taatacaaaag gcttattaat ttgactagaa aatttaaaac 540
 attactctga aattgtaact aaagttagaa agttgatttt aagaatccaa acgttaagaa 600
 ttgttaaagg ctatgattgt ctttgttctt ctaccacca ccagttgaat ttcatcatgc 660
 ttaaggccat gattttagca ataccatgt ctacacagat gttcacccaa ccacatccca 720
 ctcaacaacg ctgcttgaaa gagcagccct aggcctccac gtactgcagc ctccagagag 780
 tatctgaggg acatgtcagc aagtcctaag cctgttagca tgctgggtgag ccaagcagtt 840
 tgaatttgag ctggacctca ccaagctgct gtggccatca acctctgtat ttgaatcagc 900
 ctacagccct cacacacaat gtgtctgaga gattcatgct gattgttatt gggatatcacc 960
 actggagatc accagtggtg ggctttcaga gcctccttct tggctttgga agccatgtga 1020
 ttcatctctg ccgctcaggg ctgaccactt tatttctttt tgttcccttt tgcttcattc 1080
 aagtcagctc ttctccatcc taccacaatg cagtgccttt ctctctccca gtgcacctgt 1140
 catatgctct gatttatctc agtcaactcc ttctcatctt tctcccaagg accccaaga 1200
 agtgccttct tctcccaatt catctcact cagtccagct tagttcaagt cctgcctctt 1260
 aaataaacct ttttgacac acaaattatc ttaaaactcc tgtttcactt ggttcagtag 1320
 cacatgggtg aacactcaat ggttaactaa ttcttgggtg tttatcctat ctctccaacc 1380
 agattgtcag ctcttgagg gcaagagcca cagtataatt cctgtttctt tccacagtgc 1440
 ctaataatc tgtggaacta ggttttaata attttttaat tgatgttgtt atgggcagga 1500
 tggcaaccag accattgtct cagagcaggt gctggctctt tcttggtac tccatgttgg 1560
 ctagcctctg gtaacctctt acttattatc ttcaggacac tcactacagg gaccagggat 1620
 gatgcaacat cctgtctctt ttatgacagg atgtttgctc agcttctcca acaataagaa 1680
 gcacgtggta aaacacttgc ggatattctg gactgttttt aaaaaatata cagtttaccg 1740
 aaaatcatat aatcttacaa tgaaaaggac tttatagatc agccagtgc caaccttttc 1800
 ccaaccatc aaaaattcct tttcccgaag gaaaagggtt ttctcaataa gcctcagctt 1860
 tctaagatct aacaagatag ccaccgagat ccttatcgaa actcatttta ggcaaatatg 1920
 agttttattg tccgtttact tgtttcagag tttgtattgt gattatcaat taccacacca 1980
 tctcccatga agaaaggaaa cgggtgaagta ctaagcgcta gaggaagcag ccaagtcggt 2040
 tagtggaagc atgattgtgt ccagttagc ctctgcagga tgtggaaccc tccctccagg 2100
 ggaggttcag tgaattgtgt aggagaggtt gtctgtggcc agaatttaaa cctatactca 2160
 ctttcccaaa ttgaatcact gctcacactt ctgatgattt agagtgcgt cgggtggaga 2220
 tcccaccoga acgtcttctc taatcatgaa actcctagt tccctcatgt aacttccctg 2280
 aaaaatctaa gtgtttcata aatttgagag tctgtgaccc acttaccttg catctcacag 2340
 gtgacagta tataactaac aaccaagac tacatattgt cactgacaca cagttataa 2400
 tcatttatca tatatatata tactatgcata cactctcaaa gcaaatataa tttcacttca 2460
 aaacagtatt gacttgatata ccttgtaatt tgaatatatt tctttgttaa aatagaatgg 2520
 tatcaataaa tagaccatta atcag 2545

<210> 277

<211> 98
 <212> PRT
 <213> Homo sapiens

<400> 277
 Met Asn Gln Thr Ala Ile Leu Ile Cys Cys Leu Ile Phe Leu Thr Leu
 1 5 10 15
 Ser Gly Ile Gln Gly Val Pro Leu Ser Arg Thr Val Arg Cys Thr Cys
 20 25 30
 Ile Ser Ile Ser Asn Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu
 35 40 45
 Glu Ile Ile Pro Ala Ser Gln Phe Cys Pro Arg Val Glu Ile Ile Ala
 50 55 60
 Thr Met Lys Lys Lys Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys
 65 70 75 80
 Ala Ile Lys Asn Leu Leu Lys Ala Val Ser Lys Glu Met Ser Lys Arg
 85 90 95
 Ser Pro

<210> 278
 <211> 1172
 <212> DNA
 <213> Homo sapiens

<400> 278
 gagacattcc tcaattgctt agacatatcc tgagcctaca gcagaggaac ctccagcttc 60
 agcaccatga atcaaactgc gattctgatt tgctgcctta tctttctgac tctaagtggc 120
 attcaaggag tacctctctc tagaaccgta cgctgtacct gcacagcat tagtaatacaa 180
 cctgttaaat caaggctctt agaaaaactt gaaattatcc ctgcaagcca attttgtcca 240
 cgtgttgaga tcattgctac aatgaaaaag aagggtgaga agagatgtct gaatccagaa 300
 tcgaaggcca tcaagaattt actgaaagca gtttagcaagg aaatgtctaa aagatctcct 360
 taaaaccaga ggggagcaaa atcgatgcag tgcttccaag gatggaccac acagaggctg 420
 cctctcccat cacttcccta catggagtat atgtcaagcc ataattgttc ttagtttgca 480
 gttacactaa aagggtgacca atgatggtca ccaaatacgc tgctactact cctgtaggaa 540
 ggttaatgtt catcatccta agctattcag taataactct accctggcac tataatgtaa 600
 gctctactga ggtgctatgt tcttagtgga tgttctgacc ctgcttcaaa tattccctc 660
 acctttccca tcttccaagg gtactaagga atctttctgc tttggggttt atcagaattc 720
 tcagaatctc aaataactaa aaggatgca atcaaactcg ctttttaaaag aatgctcttt 780
 acttcatgga cttccactgc catcctccca aggggcccac attctttcag tggctaccta 840
 catcaattc caaacacata cagggaagga gaaatatctg aaaatgtatg tgtaagtatt 900
 cttatttaat gaaagactgt acaaagtata agtcttagat gtatatattt cctatattgt 960
 tttcagtgt catggaataa catgtaatta agtactatgt atcaatgagt aacagggaaa 1020
 ttttaaaaat acagatagat atatgctctg catgttacat aagataaagt tgctgaatgg 1080
 ttttcaaata aaaatgaggt actctcctgg aaatattaag aaagactatc taaatgttga 1140
 aagatcaaaa ggttaataaa gtaattataa ct 1172

<210> 279
 <211> 166
 <212> PRT
 <213> Homo sapiens

<400> 279
 Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu
 1 5 10 15
 Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu

gcggaatcat gggcaccaat gatgctgaag actg 34

<210> 282
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 282
gcgggatacct taactgctgc ggcgcttcac ctg 34

<210> 283
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 283
gccgaattca cccagtagt gagaaagggt cgctg 35

<210> 284
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 284
cgcgatacct tatgtagtct tcttttgacg agaacgttg 39

<210> 285
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 285
gccgaattcg tacctctctc tagaaccgta cgctgt 36

<210> 286
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 286
gcgggatacct taaggagatc ttttagacat ttccttgcta 40

<210> 287
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 287
 gcggaatcat gtgttactgc caggacccat atg 33

<210> 288
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 288
 gcgggacccct tactgggatg ctcttcgaac ttg 33

<210> 289
 <211> 91
 <212> PRT
 <213> Homo sapiens

<400> 289
 Met Lys Val Ser Ala Ala Ala Leu Ala Val Ile Leu Ile Ala Thr Ala
 1 5 10 15
 Leu Cys Ala Pro Ala Ser Ala Ser Pro Tyr Ser Ser Asp Thr Thr Pro
 20 25 30
 Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His Ile Lys
 35 40 45
 Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val Val Phe
 50 55 60
 Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys Lys Trp
 65 70 75 80
 Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser
 85 90

<210> 290
 <211> 1237
 <212> DNA
 <213> Homo sapiens

<400> 290
 gctgcagagg attcctgcag aggatcaaga cagcacgtgg acctgcgaca gcctctccca 60
 cagggtacccat gaagggtctcc gcggcagccc tcgctgtcat cctcattgct actgcccctct 120
 gcgctcctgc atctgcctcc ccatattcct cggacaccac accctgctgc ttgacctaca 180
 ttgcccgcgcc actgccccgt gccacatca aggagtattt ctacaccagt ggcaagtgtct 240
 ccaaccagc agtcgtcttt gtcacccgaa agaaccgcca agtgtgtgcc aaccagaga 300
 agaaatgggt tcgggagtac atcaactctt tggagatgag ctaggatgga gagtccctga 360
 acctgaactt acacaaattt gcctgtttct gcttgcctt gtccatagctt gggaggcttc 420
 cctcactat cctacccac ccgctccttg aagggccag attctaccac acagcagcag 480
 ttacaaaaac cttccccagg ctggacgtgg tggtcacgc ctgtaatccc agcactttgg 540

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gaggccaagg tgggtggatc acttgaggtc aggagttcga gaccagcctg gccaacatga 600
tgaaacccca tctctactaa aaatacaaaa aattagccgg gcgtggtagc gggcgccctgt 660
agtccagct actcgggagg ctgaggcagg agaatggcgt gaacccggga ggcggagctt 720
gcagtgcgc gagatcgcg cactgcactc cagcctgggc gacagagcga gactccgtct 780
caaaaaaaaa aaaaaaaaaa aaaatacaaa aattagccgg gcgtggtagc ccacgcctgt 840
aatcccagct actcgggagg ctaaggcagg aaaattgttt gaacccagga ggtggaggct 900
gcagtgcgc gagattgtgc cacttcactc cagcctgggt gacaaaagtg gactccgtca 960
caacaacaac aacaaaaaagc ttccccaact aaagcctaga agagcttctg aggcgctgct 1020
ttgtcaaaag gaagtctcta ggttctgagc tctggctttg ccttggcttt gccagggtct 1080
tgtgaccagg aaggaagtca gcatgcctct agaggcaagg aggggaggaa cactgcactc 1140
ttaagcttcc gccgtctcaa cccctcacag gagcttactg gcaaacatga aaaatcggct 1200
taccattaaa gttctcaatg caaccataaa aaaaaaa 1237

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<210> 291
<211> 33
<212> DNA
<213> Artificial Sequence

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```

<220>
<223> Primer

```

```

<400> 291
cgcggtatccg tgcagtcctg ctccgcctac ggc 33

```

```

<210> 292
<211> 39
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Primer

```

```

<400> 292
ccgaattctt atgctggtac ttcaactatt tcaaagtag 39

```

```

<210> 293
<211> 16
<212> PRT
<213> Artificial Sequence

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```

<220>
<223> THAP antigenic peptide

```

```

<400> 293
Ala Val Arg Arg Lys Asn Phe Lys Pro Thr Lys Tyr Ser Ser Ile Cys
1           5           10          15

```

```

<210> 294
<211> 16
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Control peptide

```

```

<400> 294

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Gln Val Glu Lys Leu Arg Lys Lys Leu Lys Thr Ala Gln Gln Arg Cys
 1 5 10 15

<210> 295
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 295
 ccgaattcag gatggtgcag tcctgctccg cct 33

<210> 296
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 296
 gcgctctaga ttatgctggt acttcaacta tttcaaagta g 41

<210> 297
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 297
 gcgtctagaa tgagtgatgg aggggctcag gactgttg 38

<210> 298
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 298
 gggcgggccgc ctatggccct ttaggggtct gtgaccgc 38

<210> 299
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 299

gcgctcgagc tgcacctggg ccttctctgc cctgg

35

<210> 300
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 300
cgaagcttac tgtgtcctt ttatctctgc ccaag

35

<210> 301
<211> 420
<212> DNA
<213> Homo sapiens

<400> 301
cttctctgcc ctgggccaag cctgcccag cctctctgtc ctctgctgc ccagctggac 60
atctctgggc ctctctggag accagtggg tgggctgtgg gggcgctata ttgccctggc 120
ttggcatccc tcttgtggct gtaccctcc cagcagcccc aggactagca agtccccgag 180
atgggggtgg ggacagtgg tgatgcaaaa gtttgtgggg gcaggggcbg ggcaggagca 240
ggaaggtccc ctgagttccc tcaccttggg cagagataaa aggagcacag ttccaggcgg 300
ggctgagcta gggcgtagct gtgatttcag gggcacctct ggcggctgcc gtgatttgag 360
aatctcgggt ctcttgctg actgatcctg ggagactgtg gatgaataat gctgggtgag 420

<210> 302
<211> 378
<212> PRT
<213> Homo sapiens

<400> 302
Met Asp Leu Gly Lys Pro Met Lys Ser Val Leu Val Val Ala Leu Leu
1 5 10 15
Val Ile Phe Gln Val Cys Leu Cys Gln Asp Glu Val Thr Asp Tyr
20 25 30
Ile Gly Asp Asn Thr Thr Val Asp Tyr Thr Leu Phe Glu Ser Leu Cys
35 40 45
Ser Lys Lys Asp Val Arg Asn Phe Lys Ala Trp Phe Leu Pro Ile Met
50 55 60
Tyr Ser Ile Ile Cys Phe Val Gly Leu Leu Gly Asn Gly Leu Val Val
65 70 75 80
Leu Thr Tyr Ile Tyr Phe Lys Arg Leu Lys Thr Met Thr Asp Thr Tyr
85 90 95
Leu Leu Asn Leu Ala Val Ala Asp Ile Leu Phe Leu Leu Thr Leu Pro
100 105 110
Phe Trp Ala Tyr Ser Ala Ala Lys Ser Trp Val Phe Gly Val His Phe
115 120 125
Cys Lys Leu Ile Phe Ala Ile Tyr Lys Met Ser Phe Phe Ser Gly Met
130 135 140
Leu Leu Leu Leu Cys Ile Ser Ile Asp Arg Tyr Val Ala Ile Val Gln
145 150 155 160
Ala Val Ser Ala His Arg His Arg Ala Arg Val Leu Leu Ile Ser Lys
165 170 175
Leu Ser Cys Val Gly Ile Trp Ile Leu Ala Thr Val Leu Ser Ile Pro

<400> 304

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 20          25          30
Glu Ser Asp Ser Cys Cys Thr Ser Pro Pro Cys Pro Gln Asp Phe Ser
 35          40          45
Leu Asn Phe Asp Arg Ala Phe Leu Pro Ala Leu Tyr Ser Leu Leu Phe
 50          55          60
Leu Leu Gly Leu Leu Gly Asn Gly Ala Val Ala Val Leu Leu Ser
 65          70          75          80
Arg Arg Thr Ala Leu Ser Ser Thr Asp Thr Phe Leu Leu His Leu Ala
 85          90          95
Val Ala Asp Thr Leu Leu Val Leu Thr Leu Pro Leu Trp Ala Val Asp
100          105          110
Ala Ala Val Gln Trp Val Phe Gly Ser Gly Leu Cys Lys Val Ala Gly
115          120          125
Ala Leu Phe Asn Ile Asn Phe Tyr Ala Gly Ala Leu Leu Leu Ala Cys
130          135          140
Ile Ser Phe Asp Arg Tyr Leu Asn Ile Val His Ala Thr Gln Leu Tyr
145          150          155          160
Arg Arg Gly Pro Pro Ala Arg Val Thr Leu Thr Cys Leu Ala Val Trp
165          170          175
Gly Leu Cys Leu Leu Phe Ala Leu Pro Asp Phe Ile Phe Leu Ser Ala
180          185          190
His His Asp Glu Arg Leu Asn Ala Thr His Cys Gln Tyr Asn Phe Pro
195          200          205
Gln Val Gly Arg Thr Ala Leu Arg Val Leu Gln Leu Val Ala Gly Phe
210          215          220
Leu Leu Pro Leu Leu Val Met Ala Tyr Cys Tyr Ala His Ile Leu Ala
225          230          235          240
Val Leu Leu Val Ser Arg Gly Gln Arg Arg Leu Arg Ala Met Arg Leu
245          250          255
Val Val Val Val Val Val Ala Phe Ala Leu Cys Trp Thr Pro Tyr His
260          265          270          275
Leu Val Val Leu Val Asp Ile Leu Met Asp Leu Gly Ala Leu Ala Arg
280          285
Asn Cys Gly Arg Glu Ser Arg Val Asp Val Ala Lys Ser Val Thr Ser
290          295          300
Gly Leu Gly Tyr Met His Cys Cys Leu Asn Pro Leu Leu Tyr Ala Phe
305          310          315          320
Val Gly Val Lys Phe Arg Glu Arg Met Trp Met Leu Leu Leu Arg Leu
325          330          335
Gly Cys Pro Asn Gln Arg Gly Leu Gln Arg Gln Pro Ser Ser Ser Arg
340          345          350
Arg Asp Ser Ser Trp Ser Glu Thr Ser Glu Ala Ser Tyr Ser Gly Leu
355          360          365
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<210> 305

<211> 1670

<212> DNA

<213> Homo sapiens

<400> 305

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cagcccgagg ctcagctcca gcagtgactg tggccatggt ccccaagacc tctatatattg 1560
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acaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1670

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<210> 306
<211> 11
<212> DNA
<213> Artificial Sequence

<220>
<223> THREE consensus sequence

<221> misc_feature
<222> (1)...(1)
<223> N=A or T

<221> misc_feature
<222> (2)...(2)
<223> N=G, C or A

<221> misc_feature
<222> (4)...(4)
<223> N= A or G

<221> misc_feature
<222> (5)...(5)
<223> N=T, C or A

<221> misc_feature
<222> (6)...(6)
<223> N= G or T

<221> misc_feature

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<222> (11)...(11)
 <223> N= A, T, G or C

 <400> 306
 nntnnnggca n 11

 <210> 307
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> THRE variant one

 <400> 307
 agtaaggga a 11

 <210> 308
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Mutant THRE

 <400> 308
 agtaatttca a 11

 <210> 309
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Mutant THRE

 <400> 309
 agtaaggtca a 11

 <210> 310
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Mutant THRE

 <400> 310
 agtaagtgca a 11

 <210> 311
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Mutant THRE

<400> 311
 agtaagggcc a 11

 <210> 312
 <211> 11
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Mutant THRE

 <400> 312
 agtaagggaa a 11

 <210> 313
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Sequence containing THRE variant one

 <400> 313
 agcaagtaag ggcaaaactac ttcac 25

 <210> 314
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Sequence containing THRE mutant

 <400> 314
 agcaagtaat ttcaaaactac ttcac 25

 <210> 315
 <211> 319
 <212> DNA
 <213> Homo sapiens

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 agggcgctgcg ctcccacat gccccgcggc gcgccattaa ccgccagatt tgaatcgcg 180
 gaccctgttg cagaggtggc ggcggcgga tgggtgcccc gacgttgccc cctgcctggc 240
 agccctttct caaggaccac cgcattctta cattcaagaa ctggcccttc ttggagggt 300
 gcgctgcac cccggagcg 319

 <210> 316
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DR-5-type element

<221> misc_feature
 <222> (7)...(7)
 <223> N=A, T, G, or C

<221> misc_feature
 <222> (8)...(8)
 <223> N=A, T, G, or C

<221> misc_feature
 <222> (9)...(9)
 <223> N=A, T, G, or C

<221> misc_feature
 <222> (10)...(10)
 <223> N=A, T, G, or C

<400> 316
 gggcaannnn ngggcac

17

<210> 317
 <211> 600
 <212> DNA
 <213> Homo sapiens

<400> 317
 tgggtgccgtg cgctgttagt cccagctact cgggaggctg aggcagaaga atgcactcca 60
 gcctgggcga cagagggata ttccgtctca aacaaacaaa aaatcactcg ctgcgttttt 120
 tattctgaca tgggtcgagga aggtaaattc aagacaactt aggtactcag ttttagaagt 180
 cgacaggaca gaattacgga aacaaattta agcgttcccc cttttagctc caaatataat 240
 gtgttccaga aaggtaacca tctaggaaac tccaaggctc agaccaccac cggatgcccc 300
 cacttcagga gcatttatat aacttcgtgg ttatgtcaga gacgagaaaa cccattgaca 360
 accaaacccc taaaccgcga catccggcgc aagccgcacg caggcgcgaga ttactagcg 420
 tcagagccga tgggtccggg aggtgggggt ggggtgggtg tggcctagcc acttcccata 480
 atgccgcgtt ccggaagtta ttgctttcca ggggtcactc tggcttcgac tccgtcgtc 540
 tcaattcgtc accaggagga agacggagct ggctgcccag cccaaaggcc catgagggga 600

<210> 318
 <211> 11
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> THRE-type element

<400> 318
 agtgtgggca t

11

<210> 319
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Sequence containing THRE mutant

<400> 319
agcaagtaag gtcaaactac ttcac 25

<210> 320
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence containing THREE mutant

<400> 320
agcaagtaag tgcaaactac ttcac 25

<210> 321
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence containing THREE mutant

<400> 321
agcaagtaag ggccaactac ttcac 25

<210> 322
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence containing THREE mutant

<400> 322
agcaagtaag ggaaaactac ttcac 25

<210> 323
<211> 94
<212> PRT
<213> Homo sapiens

<400> 323
Met Ser Val Lys Gly Met Ala Ile Ala Leu Ala Val Ile Leu Cys Ala
1 5 10 15
Thr Val Val Gln Gly Phe Pro Met Phe Lys Arg Gly Arg Cys Leu Cys
20 25 30
Ile Gly Pro Gly Val Lys Ala Val Lys Val Ala Asp Ile Glu Lys Ala
35 40 45
Ser Ile Met Tyr Pro Ser Asn Asn Cys Asp Lys Ile Glu Val Ile Ile
50 55 60
Thr Leu Lys Glu Asn Lys Gly Gln Arg Cys Leu Asn Pro Lys Ser Lys
65 70 75 80
Gln Ala Arg Leu Ile Ile Lys Lys Val Glu Arg Lys Asn Phe
85 90

<210> 324

<211> 1493
 <212> DNA
 <213> Homo sapiens

<400> 324
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 caacagcacc agcagcaaca gcaaaaaaca aacatgagtg tgaagggcat ggctatagcc 120
 ttggctgtga tattgtgtgc tacagttgtt caaggcttcc ccatgttcaa aagaggacgc 180
 tgtctttgca taggccctgg ggtaaaagca gtgaaagtgg cagatattga gaaagcctcc 240
 ataatgtacc caagtaacaa ctgtgacaaa atagaagtga ttattaccct gaaagaaaaat 300
 aaaggacaac gatgcctaaa tcccaaatcg aagcaagcaa ggcttataat caaaaaagtt 360
 gaaagaaaga atttttaaaa atatcaaaac atatgaagtc ctggaaaagg gcatctgaaa 420
 aacctagaac aagtttaact gtgactactg aaatgacaag aattctacag taggaaactg 480
 agacttttct atgggtttgt gactttcaac ttttgtacag ttatgtgaag gatgaaagg 540
 ggggtgaaagg accaaaaaca gaaatacagt ctctctgaat gaatgacaat cagaattcca 600
 ctgcccgaag gagtccagca attaatgga tttctaggaa aagctacctt aagaaaggct 660
 ggttaccatc ggagtttaca aagtgccttc acgttcttac ttgtgtatt atacattcat 720
 gcattttctag ctgtagagac ctcttagatt tgatgcttac aactattctg ttgtgactat 780
 gagaacattt ctgtctctag aagtatatctg tctgtattga tctttatgct atattactat 840
 ctgtggttac agtggagaca ttgacattat tactggagtc aagcccttat aagtcaaaa 900
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 ccaaatatca tgtagcacat caatatgtag ggaaacattc ttatgcatac tttggtttgt 1020
 ttataacca attcattaaa tgtaattcat aaaatgtact atgaaaaaaa ttatacgcta 1080
 tgggatactg gcaacagtgc acatatttca taaccaatt agcagaccg gtcttaattt 1140
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 taaaaaatgt ttttgtctac caaagaaaaa tgttgaaaaa taagcaaatg tatacctagc 1320
 aatcaactttt actttttgta attctgtctc ttagaataat acataatcta atcaatttct 1380
 ttgttcatgc ctatatactg taaaatttag gtatactcaa gactagttaa aagaatcaaa 1440
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<210> 325
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 325
 ggggaattct tccccatggt caaaagagga c 31

<210> 326
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 326
 ggggatcctt aaaaattctt tctttcaac 29

<210> 327
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

 <400> 327
 ccgaattccc accatgaaga aaagtgggtg tcttt 35

 <210> 328
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 328
 ccggatcctg tagtcttctt ttgacgagaa cgttg 35

 <210> 329
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 329
 cctctagacc accatggtcc ttgaggtgag tgac 34

 <210> 330
 <211> 32
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 330
 cccgcggccg ctcacaagcc cgagtaggag gc 32

 <210> 331
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 331
 ggcattcaat tgctcgagtt taaacgcggc cgcg 34

 <210> 332
 <211> 38
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> Primer

<400> 332
aatccgcggc cgcgttttaa ctcgagcaat tgaatgcc 38

<210> 333
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 333
atgaagtgcc tttgtactt agcctt 26

<210> 334
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 334
tcataaaaat taaaaactca aatataattg agg 33

<210> 335
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 335
atgggccaga ctgttaccac tc 22

<210> 336
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 336
ttagggggcc tcgcgg 16

<210> 337
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 337
 atggtgcagt cctgctccgc 20

 <210> 338
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 338
 gcccaattggt atgctggtac ttcaactatt t 31

 <210> 339
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 339
 atgagtgatg gaggggctca gg 22

 <210> 340
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 340
 ggaattccta tggcccttta ggg 23

 <210> 341
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 341
 atgaccccag tagtgagaaa gggtc 25

 <210> 342
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer

 <400> 342
 ggaattccta tgtagtcttc ttttgacgag a 31

<210> 343
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 343
 Met Gly Ala Pro Thr Leu Pro Pro Ala Trp Gln Pro Phe Leu Lys Asp
 1 5 10 15
 His Arg Ile Ser Thr Phe Lys Asn Trp Pro Phe Leu Glu Gly Cys Ala
 20 25 30
 Cys Thr Pro Glu Arg Met Ala Glu Ala Gly Phe Ile His Cys Pro Thr
 35 40 45
 Glu Asn Glu Pro Asp Leu Ala Gln Cys Phe Phe Cys Phe Lys Glu Leu
 50 55 60
 Glu Gly Trp Glu Pro Asp Asp Asp Pro Ile Glu Glu His Lys Lys His
 65 70 75 80
 Ser Ser Gly Cys Ala Phe Leu Ser Val Lys Lys Gln Phe Glu Glu Leu
 85 90 95
 Thr Leu Gly Glu Phe Leu Lys Leu Asp Arg Glu Arg Ala Lys Asn Lys
 100 105 110
 Ile Ala Lys Glu Thr Asn Asn Lys Lys Lys Glu Phe Glu Glu Thr Ala
 115 120 125
 Lys Lys Val Arg Arg Ala Ile Glu Gln Leu Ala Ala Met Asp
 130 135 140

<210> 344
 <211> 1619
 <212> DNA
 <213> Homo sapiens

<400> 344
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 gacgttgccc cctgcctggc agccctttct caaggaccac cgcattctcta cattcaagaa 120
 ctggcccttc ttggagggtc gcgcctgcac cccggagcgg atggccgagg ctggcttcat 180
 ccaactgcccc actgagaacg agccagactt ggcccagtggt ttcttctgct tcaaggagct 240
 ggaagggtcg gagccagatg acgaccccat agaggaaact aaaaagcatt cgtccggttg 300
 cgcttttctt tctgtcaaga agcagtttga agaattaacc ctgggtgaat ttttgaaact 360
 ggacagagaa agagccaaga acaaaattgc aaaggaaacc acaataaga agaaagaatt 420
 tgaggaaact gcgaagaag tgccgctgac catcgagcag ctggctgcca tggattgagg 480
 cctctggccg gagctgcctg gtcccagagt ggctgcacca cttccagggt ttattccctg 540
 gtgccaccag ccttctctgt ggcctcttag caatgtctta ggaaaggaga tcaacatttt 600
 caaattagat gtttcaactg tgctcctggt ttgtcttgaa agtggcacca gaggtgcttc 660
 tgccctgtgca cgggtgctgt ctggttaacag tggctgcttc tctctctctc tctctttttt 720
 gggggctcat tttgtctgtt ttgattcccg ggcttaccag gtgagaagt agggaggaag 780
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 tattttgttt gaattgttaa ttcacagaat agcacaact acaattaaaa ctaagcaca 1140
 agccattcta agtactttgg gaaacggggg gaacttcagg tggatgagga gacagaatag 1200
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 agtgagccgc ggggcacatg ctggccgctc ctccctcaga aaaaggcagt ggcttaaatc 1320
 ctttttaaat gacttggctc gatgctgtgg gggactggct gggctgctgc aggcctgtgt 1380
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 gctggaaaacc tctggaggtc atctcggctg ttcctgagaa ataaaaagcc tgtcatttc 1619

<210> 345
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 345
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 1 5 10 15
 Arg Val Val Ala Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile
 20 25 30
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Thr Pro Arg Phe Gly Lys
 35 40 45
 Thr Phe Asp Ala Pro Pro Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu
 50 55 60
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Lys Gly Pro
 65 70 75 80
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95
 Thr Val Lys Ala Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro
 100 105 110
 Glu Ile Glu Lys Phe Phe Pro Phe Asn Pro Leu Asp Phe Glu Ser Phe
 115 120 125
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Gly Val
 130 135 140
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln
 145 150 155 160
 Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Ser
 165 170 175
 Asn Leu Leu Gln Ser Pro Ser Ser Ile Leu Ser Thr Leu Asp Val Glu
 180 185 190
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile
 195 200

<210> 346
 <211> 727
 <212> DNA
 <213> Homo sapiens

<400> 346
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 atgttgataa ggaatatgga gaaccaggca cccgtgtggt tgctaaggat gggctgaagc 120
 tggggctctg accctcaatc aaagccttag atgggagatc tcaagtttca acaccacgtt 180
 ttggcaaaac gttcgatgcc ccaccagcct tacctaaagc tactagaaag gctttgggaa 240
 ctgtcaacag agctacagaa agtctgttaa agaccaaggg acccctcaaa caaaaacagc 300
 caagcttttc tgccaaaaag atgactgaga agactgttaa agcaaaaagc tctgttcctg 360
 cctcagatga tgccatcca gaaatagaaa aattctttcc cttcaatcct ctgactttg 420
 agagttttga cctgcctgaa gagcaccaga ttgcgcacct ccccttgagt ggagtgcctc 480
 tcatgatect tgacgaggag agagagcttg aaaaagctgtt tcagctgggc ccccttcac 540
 ctgtgaagat gcctctcca ccatgggaat ccaatctgtt gcagtctcct tcaagcattc 600
 tgtcgaccct ggatgttgaa ttgccacctg tttgtctgtg catagatatt taaattttct 660
 agtgcttcag agtttgtgtg tatttgtatt aataaagcat tcttcaacag aaaaaaaaaa 720
 aaaaaaa 727

<210> 347
 <211> 79
 <212> PRT
 <213> Homo sapiens

<400> 347
 Met Ser His Lys Gln Ile Tyr Tyr Ser Asp Lys Tyr Asp Asp Glu Glu
 1 5 10 15
 Phe Glu Tyr Arg His Val Met Leu Pro Lys Asp Ile Ala Lys Leu Val
 20 25 30
 Pro Lys Thr His Leu Met Ser Glu Ser Glu Trp Arg Asn Leu Gly Val
 35 40 45
 Gln Gln Ser Gln Gly Trp Val His Tyr Met Ile His Glu Pro Glu Pro
 50 55 60
 His Ile Leu Leu Phe Arg Arg Pro Leu Pro Lys Lys Pro Lys Lys
 65 70 75

<210> 348
 <211> 717
 <212> DNA
 <213> Homo sapiens

<400> 348
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 atgtctgaat ctgaatggag gaatcttggc gttcagcaga gtcagggatg ggtccattat 180
 atgatccatg aaccagaacc tcacatcttg ctgttccggc gccactacc caagaaacca 240
 aagaaatgaa gctggcaagc tacttttcag cctcaagctt tacacagctg tccttacttc 300
 ctaacatctt tctgataaca ttattatggt gccttcttgt ttctcacttt gatatttaaa 360
 agatgttcaa tacactgttt gaatgtgctg gtaactgctt tgcttcttga gtagagccac 420
 caccaccata gccagccag atgagtgcgc tgtggaccca cagcctaagc tgagtgtgac 480
 cccagaagcc acgatgtgct ctgtatccag aacacacttg gcagatggag gaagcatctg 540
 agtttgagac catggctgtt acagggatca tgtaaacttg ctgtttttgt tttttctgcc 600
 ggggtgttga tgtgtgtgga cttgcggatt tatgtttcag tgtactggaa actttccatt 660
 ttattcaaga aatctgttca tgttaaaagc cttgattaaa gaggaagttt ttataat 717

<210> 349
 <211> 205
 <212> PRT
 <213> Homo sapiens

<400> 349
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 Tyr Gln Arg Gly Ile Tyr Pro Ser Glu Thr Phe Thr Arg Val Gln Lys
 35 40 45
 Tyr Gly Leu Thr Leu Leu Val Thr Thr Asp Leu Glu Leu Ile Lys Tyr
 50 55 60
 Leu Asn Asn Val Val Glu Gln Leu Lys Asp Trp Leu Tyr Lys Cys Ser
 65 70 75 80
 Val Gln Lys Leu Val Val Val Ile Ser Asn Ile Glu Ser Gly Glu Val
 85 90 95
 Leu Glu Arg Trp Gln Phe Asp Ile Glu Cys Asp Lys Thr Ala Lys Asp

100	105	110
Asp Ser Ala Pro Arg Glu Lys Ser Gln Lys Ala Ile Gln Asp Glu Ile		
115	120	125
Arg Ser Val Ile Arg Gln Ile Thr Ala Thr Val Thr Phe Leu Pro Leu		
130	135	140
Leu Glu Val Ser Cys Ser Phe Asp Leu Leu Ile Tyr Thr Asp Lys Asp		
145	150	155
Leu Val Val Pro Glu Lys Trp Glu Glu Ser Gly Pro Gln Phe Ile Thr		
165	170	175
Asn Ser Glu Glu Val Arg Leu Arg Ser Phe Thr Thr Thr Ile His Lys		
180	185	190
Val Asn Ser Met Val Ala Tyr Lys Ile Pro Val Asn Asp		
195	200	205

<210> 350
 <211> 1390
 <212> DNA
 <213> Homo sapiens

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 gcgccgaaat cgtggccgag ttcttctcat tcggcatcaa cagcatttta taccagcgtg 180
 gcataatccc atctgaaacc ttactcgcag tgcagaaata cggactcacc ttgcttgtta 240
 ctactgatct tgagctcata aaatacctaa ataattgtgt ggaacaactg aaagatttgt 300
 tatacaagtg ttcagttcag aaactggttg tagttatctc aaatattgaa agtgggtgag 360
 tccctggaaag atggcagttt gatattgagt gtgacaagac tgcacaaagat gacagtgcac 420
 ccagagaaaa gtctcagaaa gctatccagg atgaaatccg ttcagtgatc agacagatca 480
 cagctacggg gacatttctg ccactgttgg aagtttcttg ttcatttgat ctgctgattt 540
 atacagacaa agatttgggt gtacctgaaa aatgggaaga ttcgggacca cagtttatta 600
 ccaattctga ggaagtccgc cttcgttcat ttactactac aatccacaaa gtaaatagca 660
 tgggtggccta caaaattcct gtcaatgact gaggatgaca tggagaaaat aatgtaattg 720
 taattttgaa atgtggtttt cctgaaatca ggtcatctat agttgatatg ttttatttca 780
 ttggttaatt ttacatgga gaaaaccaa atgatactta ctgaaactgt tgtaatttgtt 840
 cctttatttt tttggtacct atttgactta ccatggagtt aacatcatga atttattgca 900
 cattgttcaa aaggaaccag gaggtttttt tgtcaacatt gtgatgtata ttcccttgaa 960
 gatagtaact gtagatggaa aaacttgtgc tataaagcta gatgctttcc taaatcagat 1020
 gttttgtgca agtagtttga ctcagtatag gtaggagatg atttaagtat aaaatacaac 1080
 aaaggaagtc taaatattca gaatctttgt taaggctcctg aaagtaactc ataactata 1140
 aacaatgaaa tattgctgta tagctccttt tgaccttcat ttcattgtata gttttcccta 1200
 ttgaatcagt ttccaattat ttgactttaa tttatgtaac ttgaacctat gaagcaatgg 1260
 atattgttac tgtttaatgt tctgtgatac agaactctta aaaatgtttt ttcattgtgt 1320
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 aaaaaaaaaa 1390

<210> 351
 <211> 823
 <212> PRT
 <213> Homo sapiens

<400> 351
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 20 25 30
 Gln Gly Asn Leu Lys Lys Ala Leu Val Asn Val Glu Trp Asn Ile Cys

35					40					45					
Gln	Asp	Cys	Lys	Thr	Asp	Asn	Lys	Val	Lys	Asp	Lys	Ala	Glu	Glu	Glu
50					55					60					
Thr	Glu	Glu	Lys	Pro	Ser	Val	Trp	Leu	Cys	Leu	Lys	Cys	Gly	His	Gln
65					70					75					80
Gly	Cys	Gly	Arg	Asn	Ser	Gln	Glu	Gln	His	Ala	Leu	Lys	His	Tyr	Leu
				85					90					95	
Thr	Pro	Arg	Ser	Glu	Pro	His	Cys	Leu	Val	Leu	Ser	Leu	Asp	Asn	Trp
			100				105					110			
Ser	Val	Trp	Cys	Tyr	Val	Cys	Asp	Asn	Glu	Val	Gln	Tyr	Cys	Ser	Ser
		115					120					125			
Asn	Gln	Leu	Gly	Gln	Val	Val	Asp	Tyr	Val	Arg	Lys	Gln	Ala	Ser	Ile
130					135					140					
Thr	Thr	Pro	Lys	Pro	Ala	Glu	Lys	Asp	Asn	Gly	Asn	Ile	Glu	Leu	Glu
145				150						155					160
Asn	Lys	Lys	Leu	Glu	Lys	Glu	Ser	Lys	Asn	Glu	Gln	Glu	Arg	Glu	Lys
			165						170					175	
Lys	Glu	Asn	Met	Ala	Lys	Glu	Asn	Pro	Pro	Met	Asn	Ser	Pro	Cys	Gln
			180				185					190			
Ile	Thr	Val	Lys	Gly	Leu	Ser	Asn	Leu	Gly	Asn	Thr	Cys	Phe	Phe	Asn
		195					200					205			
Ala	Val	Met	Gln	Asn	Leu	Ser	Gln	Thr	Pro	Val	Leu	Arg	Glu	Leu	Leu
			210				215					220			
Lys	Glu	Val	Lys	Met	Ser	Gly	Thr	Ile	Val	Lys	Ile	Glu	Pro	Pro	Asp
225				230						235					240
Leu	Ala	Leu	Thr	Glu	Pro	Leu	Glu	Ile	Asn	Leu	Glu	Pro	Pro	Gly	Pro
			245						250					255	
Leu	Thr	Leu	Ala	Met	Ser	Gln	Phe	Leu	Asn	Glu	Met	Gln	Glu	Thr	Lys
			260				265					270			
Lys	Gly	Val	Val	Thr	Pro	Lys	Glu	Leu	Phe	Ser	Gln	Val	Cys	Lys	Lys
		275					280					285			
Ala	Val	Arg	Phe	Lys	Gly	Tyr	Gln	Gln	Gln	Asp	Ser	Gln	Glu	Leu	Leu
		290					295					300			
Arg	Tyr	Leu	Leu	Asp	Gly	Met	Arg	Ala	Glu	Glu	His	Gln	Arg	Val	Ser
305				310						315					320
Lys	Gly	Ile	Leu	Lys	Ala	Phe	Gly	Asn	Ser	Thr	Glu	Lys	Leu	Asp	Glu
			325						330					335	
Glu	Leu	Lys	Asn	Lys	Val	Lys	Asp	Tyr	Glu	Lys	Lys	Lys	Ser	Met	Pro
		340					345					350			
Ser	Phe	Val	Asp	Arg	Ile	Phe	Gly	Gly	Glu	Leu	Thr	Ser	Met	Ile	Met
		355					360					365			
Cys	Asp	Gln	Cys	Arg	Thr	Val	Ser	Leu	Val	His	Glu	Ser	Phe	Leu	Asp
		370					375					380			
Leu	Ser	Leu	Pro	Val	Leu	Asp	Asp	Gln	Ser	Gly	Lys	Lys	Ser	Val	Asn
385				390						395					400
Asp	Lys	Asn	Leu	Lys	Lys	Thr	Val	Glu	Asp	Glu	Asp	Gln	Asp	Ser	Glu
			405						410					415	
Glu	Glu	Lys	Asp	Asn	Asp	Ser	Tyr	Ile	Lys	Glu	Arg	Ser	Asp	Ile	Pro
		420					425					430			
Ser	Gly	Thr	Ser	Lys	His	Leu	Gln	Lys	Lys	Ala	Lys	Lys	Gln	Ala	Lys
		435					440					445			
Lys	Gln	Ala	Lys	Asn	Gln	Arg	Arg	Gln	Gln	Lys	Ile	Gln	Gly	Lys	Val
		450					455					460			
Leu	His	Leu	Asn	Asp	Ile	Cys	Thr	Ile	Asp	His	Pro	Glu	Asp	Ser	Glu
465				470						475					480
Tyr	Glu	Ala	Glu	Met	Ser	Leu	Gln	Gly	Glu	Val	Asn	Ile	Lys	Ser	Asn
			485						490						495

His Ile Ser Gln Glu Gly Val Met His Lys Glu Tyr Cys Val Asn Gln
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 Lys Asp Leu Asn Gly Gln Ala Lys Met Ile Glu Ser Val Thr Asp Asn
 515 520 525
 Gln Lys Ser Thr Glu Glu Val Asp Met Lys Asn Ile Asn Met Asp Asn
 530 535 540
 Asp Leu Glu Val Leu Thr Ser Ser Pro Thr Arg Asn Leu Asn Gly Ala
 545 550 555 560
 Tyr Leu Thr Glu Gly Ser Asn Gly Glu Val Asp Ile Ser Asn Gly Phe
 565 570 575
 Lys Asn Leu Asn Leu Asn Ala Ala Leu His Pro Asp Glu Ile Asn Ile
 580 585 590
 Glu Ile Leu Asn Asp Ser His Thr Pro Gly Thr Lys Val Tyr Glu Val
 595 600 605
 Val Asn Glu Asp Pro Glu Thr Ala Phe Cys Thr Leu Ala Asn Arg Glu
 610 615 620
 Val Phe Asn Thr Asp Glu Cys Ser Ile Gln His Cys Leu Tyr Gln Phe
 625 630 635 640
 Thr Arg Asn Glu Lys Leu Arg Asp Ala Asn Lys Leu Leu Cys Glu Val
 645 650 655
 Cys Thr Arg Arg Gln Cys Asn Gly Pro Lys Ala Asn Ile Lys Gly Glu
 660 665 670
 Arg Lys His Val Tyr Thr Asn Ala Lys Lys Gln Met Leu Ile Ser Leu
 675 680 685
 Ala Pro Pro Val Leu Thr Leu His Leu Lys Arg Phe Gln Gln Ala Gly
 690 695 700
 Phe Asn Leu Arg Lys Val Asn Lys His Ile Lys Phe Pro Glu Ile Leu
 705 710 715 720
 Asp Leu Ala Pro Phe Cys Thr Leu Lys Cys Lys Asn Val Ala Glu Glu
 725 730 735
 Asn Thr Arg Val Leu Tyr Ser Leu Tyr Gly Val Val Glu His Ser Gly
 740 745 750
 Thr Met Arg Ser Gly His Tyr Thr Ala Tyr Ala Lys Ala Arg Thr Ala
 755 760 765
 Asn Ser His Leu Ser Asn Leu Val Leu His Gly Asp Ile Pro Gln Asp
 770 775 780
 Phe Glu Met Glu Ser Lys Gly Gln Trp Phe His Ile Ser Asp Thr His
 785 790 795 800
 Val Gln Ala Val Pro Thr Thr Lys Val Leu Asn Ser Gln Ala Tyr Leu
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 Leu Phe Tyr Glu Arg Ile Leu
 820

<210> 352
 <211> 2903
 <212> DNA
 <213> Homo sapiens

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 gtgccaaacat gggaaagaaa cggacaaaagg gaaaaactgt tccaatcgat gattcctctg 180
 aaactttaga acctgtgtgc agacacatta gaaaaggatt ggaacaagggt aatttgaaaa 240
 aggctttagt gaatgtggaa tggaatatct gccaaagactg taagactgac aataaagtga 300
 aagataaagc tgaagaagaa acagaagaaa agccttcagt ttggctgtgt cttaaagtgt 360
 gccatcaggg ctgtggcaga aattctcagg agcagcatgc cttgaagcac tatctgacgc 420

caagatctga acctcactgt ctgggttctta gtttggacaa ctggagtgtg tgggtgttacg 480
 tatgtgataa tgagggtccag tattgttagtt caaacaggtt ggggtcaagtg gttgattatg 540
 tcagaaaaaagc agccagcact acaactccaa agccagcaga gaaagataat ggaataattg 600
 aacttgaaaa taaaaaatta gaaaaagaga gtaagaatga acaagagaga gaaaagaagg 660
 aaaacatggc taaagagaaat cctcccatga attctccttg ccaataaacc gtgaaggagc 720
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 cagtgtcttag agaactatga aaatgtcttg aacaattgtg aaaaattgaa 840
 cactgtattt ggcattaaca gaaccattag aaataaacct tgagcctcca ggccctctta 900
 ctttagccat gagccagttt cttaattgaga tgcaagagac caaaaagggg gttgtgacac 960
 aaaaagataa cgacagttac gtctgtataa aagcagtgcg gtttaagggc tatcagcagc 1020
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 gagtgagtta aggaataact aaagcatttg gtaattctac tgaaaagttg gatgaagaac 1140
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 ataaactgac ttaccctaaa atc 2903

<210> 353
 <211> 724
 <212> PRT
 <213> Homo sapiens

<400> 353
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 20 25 30
 Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys
 35 40 45
 Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
 50 55 60

Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Glu Ser Gln Lys Asn
 65 70 75 80
 Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu Gln
 85 90 95
 Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu Leu
 100 105 110
 Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr Ser
 115 120 125
 Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu Thr
 130 135 140
 Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn Gln
 145 150 155 160
 Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn Lys
 165 170 175
 Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met Glu
 180 185 190
 Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly Lys
 195 200 205
 Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys Ile
 210 215 220
 Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu Ile
 225 230 235 240
 Ser Cys Ala Ser Asp Gln Val Glu Lys Tyr Lys Leu Asp Ile Ala Gln
 245 250 255
 Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu Lys
 260 265 270
 Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu Asp
 275 280 285
 Leu Asn Val Lys Cys Gln Leu Leu Glu Lys Glu Lys Glu Asp His Val
 290 295 300
 Asn Arg Asn Arg Glu His Asn Glu Asn Leu Asn Ala Glu Met Gln Asn
 305 310 315 320
 Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu Lys Leu Gln
 325 330 335
 Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu Lys Glu Leu
 340 345 350
 Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu Glu Met Val
 355 360 365
 Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr Leu Asp Glu
 370 375 380
 Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg Leu Val Lys
 385 390 395 400
 Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu Lys Leu Leu
 405 410 415
 Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys Ser Ser Ala
 420 425 430
 Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr Asp Ser Met
 435 440 445
 Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser Tyr Lys Ala
 450 455 460
 Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser Ser Leu
 465 470 475 480
 Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val Gln His
 485 490 495
 Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg Met Leu
 500 505 510
 Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile Lys Glu

515	520	525
Ile Thr Val Ser Phe Leu Gln Lys	Ile Thr Asp Leu Gln Asn Gln Leu	
530	535	540
Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu Gly		
545	550	555
Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu Ile		560
565	570	575
Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys Pro		
580	585	590
Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu Leu		
595	600	605
Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp Ser		
610	615	620
Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys His		
625	630	635
Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val Ser		
645	650	655
Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys Leu		
660	665	670
Gln Glu Glu Leu Asn Lys Val Leu Glu Gly Ile Lys His Phe Asp Pro Ser		
675	680	685
Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr Pro		
690	695	700
Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys Gln		
705	710	715
Glu Ser Trp Lys		720

<210> 354
 <211> 3002
 <212> DNA
 <213> Homo sapiens

<400> 354
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 ttagaagtat tgaaggacc agtatccttt cagaaatcac aaagatttaa acaacaaaaa 180
 gaatctaacc aaaatcttaa tgttgacaaa gatactacct tgctgtcttc agctagaaaa 240
 gttaagtctt cggaatcaaa ggaatctcaa aagaatgata aagatttgaa gatattagag 300
 aaagagattc gtgttcttct acaggaacgt ggtgcccagg acagccggat ccaggatctg 360
 gaaactgagt tggaaaagat ggaagcaagg ctaaatgctg cactaaggga aaaaacatct 420
 ctctctgcaa ataatgtctac actggaaaaa caacttattg aattgaccag gactaatgaa 480
 ctactaaaat ctaagttttc tgaaaatggt aaccagaaga atttgagaat tctaagcttg 540
 gagttgatga aacttagaaa caaaagagaa acaaagatga ggggtatgat ggctaagcaa 600
 gaaggcatgg agatgaagct gcaggtcacc caaaggagtc tcgaagagtc tcaagggaaa 660
 atagcccaac tggagggaaa acttgtttca atagagaaag aaaagattga tgaaaaatct 720
 gaaacagaaa aactcttgga atacatcgaa gaaattagtt gtgcttcaga tcaagtggaa 780
 aaatacaagc tagatatggc ccagtttagaa gaaaatttga aagagaagaa tgatgaaatt 840
 ttaagcctta agcagtcctc tgaggagaaat attgttatat tatctaaaca agtagaagat 900
 ctaaatgtga aatgtcagct gcttgaaaaa gaaaaagaag accatgtcaa cagggaataga 960
 gaacacaacg aaaatctaaa tgcagagatg caaaacttaa aacagaagtt tattcttgaa 1020
 caacaggaac gtgaaaagct tcaacaaaaa gaattacaaa ttgattcact tctgcaacaa 1080
 gagaaagaat tatcttcgag tcttcacag aagctctgtt cttttcaaga ggaaatgggt 1140
 aaagagaaga atctgtttga ggaagaatta aagcaaacac tggatgagct tgataaatta 1200
 cagcaaaaag aggaacaagc tgaaaggctg gtcaagcaat tggaaagagg agcaaaatct 1260
 agagctgaag aattaaact cctagaagaa aagctgaaag ggaaggaggc tgaactggag 1320

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aaaagtagtg ctgctcatat ccaggccacc ctgcttttgc agggaaaagta tgacagtagt 1380
gtgcaaaagcc ttgaagatgt tactgctcaa tttgaaagct ataaagcggt aacagccagt 1440
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<210> 355
 <211> 846
 <212> PRT
 <213> Homo sapiens

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<400> 355
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 20          25          30
Glu Asn Arg His Lys Glu Tyr Glu Arg Asn Arg His Phe Gly Leu Lys
 35          40          45
Asp Val Asn Ile Pro Thr Leu Glu Gly Arg Ile Leu Val Glu Leu Asp
 50          55          60
Glu Thr Ser Gln Glu Leu Val Pro Glu Lys Thr Asn Val Lys Pro Arg
 65          70          75          80
Ala Met Lys Thr Ile Leu Gly Asp Gln Arg Lys Gln Met Leu Gln Lys
 85          90          95
Tyr Lys Glu Glu Lys Gln Leu Gln Lys Leu Lys Glu Gln Arg Glu Lys
100          105          110
Ala Lys Arg Gly Ile Phe Lys Val Gly Arg Tyr Arg Pro Asp Met Pro
115          120          125
Cys Phe Leu Leu Ser Asn Gln Asn Ala Val Lys Ala Glu Pro Lys Lys
130          135          140
Ala Ile Pro Ser Ser Val Arg Ile Thr Arg Ser Lys Ala Lys Asp Gln
145          150          155          160
Met Glu Gln Thr Lys Ile Asp Asn Glu Ser Asp Val Arg Ala Ile Arg

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Gly Leu Ser Val Ser Ser Glu Gly Pro Ser Gln Arg Leu Gly Thr Pro
 625 630 635 640
 Lys Ser Val Asn Lys Ala Val Ser Gln Ser Arg Asn Glu Met Gly Ile
 645 650 655
 Pro Gln Gln Thr Thr Ser Pro Glu Asn Ala Gly Pro Gln Asn Thr Lys
 660 665 670
 Ser Glu His Val Lys Lys Thr Leu Phe Leu Ser Ile Pro Glu Ser Arg
 675 680 685
 Ser Ser Ile Glu Asp Ala Gln Cys Pro Gly Leu Pro Asp Leu Ile Glu
 690 695 700
 Glu Asn His Val Val Asn Lys Thr Asp Leu Lys Val Asp Cys Leu Ser
 705 710 715 720
 Ser Glu Arg Met Ser Leu Pro Leu Leu Ala Gly Gly Val Ala Asp Asp
 725 730 735
 Ile Asn Thr Asn Lys Lys Glu Gly Ile Ser Asp Val Val Glu Gly Met
 740 745 750
 Glu Leu Asn Ser Ser Ile Thr Ser Gln Asp Val Leu Met Ser Ser Pro
 755 760 765
 Glu Lys Asn Thr Ala Ser Gln Asn Ser Ile Leu Glu Glu Gly Glu Thr
 770 775 780
 Lys Ile Ser Gln Ser Glu Leu Phe Asp Asn Lys Ser Leu Thr Thr Glu
 785 790 795 800
 Cys His Leu Leu Asp Ser Pro Gly Leu Asn Cys Ser Asn Pro Phe Thr
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<210> 356
 <211> 2979
 <212> DNA
 <213> Homo sapiens

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 agagcttggt ccagaaaaaga ccaatgttaa gccaaaggga atgaaaacta ttctaggtga 480
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<210> 357
<211> 191
<212> PRT
<213> Homo sapiens

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<400> 357
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Arg Val Ala Ala Lys Asp Val Leu Lys Leu Glu Ser Arg Pro Ser Ile
20 25 30
Lys Ala Leu Asp Gly Ile Ser Gln Val Leu Thr Pro Arg Phe Gly Lys
35 40 45
Thr Tyr Asp Ala Pro Ser Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu
50 55 60
Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
65 70 75 80
Arg Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
85 90 95
Thr Val Lys Thr Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro
100 105 110
Glu Ile Glu Lys Phe Phe Pro Phe Asn Leu Leu Asp Phe Glu Ser Phe
115 120 125
Asp Leu Pro Glu Glu Arg Gln Ile Ala His Leu Pro Leu Ser Gly Val
130 135 140
Pro Leu Met Ile Leu Asp Glu Glu Gly Glu Leu Lys Leu Phe Gln
145 150 155 160
Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Cys

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<211> 609
 <212> DNA
 <213> Homo sapiens

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 agaaaggctt tgggaactgt caacagagct acagaaaagt cagtaaagac caatggaccc 240
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<210> 361
 <211> 450
 <212> PRT
 <213> Homo sapiens

<400> 361
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 35 40 45
 Thr Lys Pro Lys Phe Arg Ser Asp Ile Ser Glu Glu Leu Ala Ser Val
 50 55 60
 Phe Tyr Glu Asp Ser Asp Asn Glu Ser Phe Cys Gly Phe Ser Glu Ser
 65 70 75 80
 Glu Val Gln Asp Val Leu Asp His Cys Gly Phe Leu Gln Lys Pro Arg
 85 90 95
 Pro Asp Val Thr Asn Glu Leu Ala Gly Ile Phe His Ala Asp Ser Asp
 100 105 110
 Asp Glu Ser Phe Cys Gly Phe Ser Glu Ser Glu Ile Gln Asp Gly Met
 115 120 125
 Arg Leu Gln Ser Val Arg Glu Gly Cys Arg Thr Arg Ser Gln Cys Arg
 130 135 140
 His Ser Gly Pro Leu Arg Val Ala Met Lys Phe Pro Ala Arg Ser Thr
 145 150 155 160
 Arg Gly Ala Thr Asn Lys Lys Ala Glu Ser Arg Gln Pro Ser Glu Asn
 165 170 175
 Ser Val Thr Asp Ser Asn Ser Asp Ser Glu Asp Glu Ser Gly Met Asn
 180 185 190
 Phe Leu Glu Lys Arg Ala Leu Asn Ile Lys Gln Asn Lys Ala Met Leu
 195 200 205
 Ala Lys Leu Met Ser Glu Leu Glu Ser Phe Pro Gly Ser Phe Arg Gly
 210 215 220
 Arg His Pro Leu Pro Gly Ser Asp Ser Gln Ser Arg Arg Pro Arg Arg
 225 230 235 240
 Arg Thr Phe Pro Gly Val Ala Ser Arg Arg Asn Pro Glu Arg Arg Ala
 245 250 255
 Arg Pro Leu Thr Arg Ser Arg Ser Arg Ile Leu Gly Ser Leu Asp Ala
 260 265 270

Leu Pro Met Glu Glu Glu Glu Glu Glu Asp Lys Tyr Met Leu Val Arg
 275 280 285
 Lys Arg Lys Thr Val Asp Gly Tyr Met Asn Glu Asp Asp Leu Pro Arg
 290 295 300
 Ser Arg Arg Ser Arg Ser Ser Val Thr Leu Pro His Ile Ile Arg Pro
 305 310 315 320
 Val Glu Glu Ile Thr Glu Glu Glu Leu Glu Asn Val Cys Ser Asn Ser
 325 330 335
 Arg Glu Lys Ile Tyr Asn Arg Ser Leu Gly Ser Thr Cys His Gln Cys
 340 345 350
 Arg Gln Lys Thr Ile Asp Thr Lys Thr Asn Cys Arg Asn Pro Asp Cys
 355 360 365
 Trp Gly Val Arg Gly Gln Phe Cys Gly Pro Cys Leu Arg Asn Arg Tyr
 370 375 380
 Gly Glu Glu Val Arg Asp Ala Leu Leu Asp Pro Asn Trp His Cys Pro
 385 390 395 400
 Pro Cys Arg Gly Ile Cys Asn Cys Ser Phe Cys Arg Gln Arg Asp Gly
 405 410 415
 Arg Cys Ala Thr Gly Val Leu Val Tyr Leu Ala Lys Tyr His Gly Phe
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 Gly Asn Val His Ala Tyr Leu Lys Ser Leu Lys Gln Glu Phe Glu Met
 435 440 445
 Gln Ala
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<210> 362
 <211> 2824
 <212> DNA
 <213> Homo sapiens

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<210> 363
 <211> 371
 <212> PRT
 <213> Homo sapiens

<400> 363
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 35 40 45
 Thr Arg Leu Gln Ser Val Arg Glu Gly Cys Arg Thr Arg Ser Gln Cys
 50 55 60
 Arg His Ser Gly Pro Leu Arg Val Ala Met Lys Phe Pro Ala Arg Ser
 65 70 75 80
 Thr Arg Gly Ala Thr Asn Lys Lys Ala Glu Ser Arg Gln Pro Ser Glu
 85 90 95
 Asn Ser Val Thr Asp Ser Asn Ser Asp Ser Glu Asp Glu Ser Gly Met
 100 105 110
 Asn Phe Leu Glu Lys Arg Ala Leu Asn Ile Lys Gln Asn Lys Ala Met
 115 120 125
 Leu Ala Lys Leu Met Ser Glu Leu Glu Ser Phe Pro Gly Ser Phe Arg
 130 135 140
 Gly Arg His Pro Leu Pro Gly Ser Asp Ser Gln Ser Arg Arg Pro Arg
 145 150 155 160
 Arg Arg Thr Phe Pro Gly Val Ala Ser Arg Arg Asn Pro Glu Arg Arg
 165 170 175
 Ala Arg Pro Leu Thr Arg Ser Arg Ser Arg Ile Leu Gly Ser Leu Asp
 180 185 190
 Ala Leu Pro Met Glu Glu Glu Glu Glu Asp Lys Tyr Met Leu Val
 195 200 205
 Arg Lys Arg Lys Thr Val Asp Gly Tyr Met Asn Glu Asp Asp Leu Pro

210 215 220
 Arg Ser Arg Arg Ser Arg Ser Ser Val Thr Leu Pro His Ile Ile Arg
 225 230 235 240
 Pro Val Glu Glu Ile Thr Glu Glu Glu Leu Glu Asn Val Cys Ser Asn
 245 250 255
 Ser Arg Glu Lys Ile Tyr Asn Arg Ser Leu Gly Ser Thr Cys His Gln
 260 265 270
 Cys Arg Gln Lys Thr Ile Asp Thr Lys Thr Asn Cys Arg Asn Pro Asp
 275 280 285
 Cys Trp Gly Val Arg Gly Gln Phe Cys Gly Pro Cys Leu Arg Asn Arg
 290 295 300
 Tyr Gly Glu Glu Val Arg Asp Ala Leu Leu Asp Pro Asn Trp His Cys
 305 310 315 320
 Pro Pro Cys Arg Gly Ile Cys Asn Cys Ser Phe Cys Arg Gln Arg Asp
 325 330 335
 Gly Arg Cys Ala Thr Gly Val Leu Val Tyr Leu Ala Lys Tyr His Gly
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 Phe Gly Asn Val His Ala Tyr Leu Lys Ser Leu Lys Gln Glu Phe Glu
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 Met Gln Ala
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<210> 364
 <211> 2587
 <212> DNA
 <213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala
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Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Ile Arg Val Leu Leu
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Gln Glu Arg Gly Ala Gln Asp Ser Arg Ile Gln Asp Leu Glu Thr Glu
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Leu Glu Lys Met Glu Ala Arg Leu Asn Ala Ala Leu Arg Glu Lys Thr
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Ser Leu Ser Ala Asn Asn Ala Thr Leu Glu Lys Gln Leu Ile Glu Leu
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Thr Arg Thr Asn Glu Leu Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn
130 135 140
Gln Lys Asn Leu Arg Ile Leu Ser Leu Glu Leu Met Lys Leu Arg Asn
145 150 155 160
Lys Arg Glu Thr Lys Met Arg Gly Met Met Ala Lys Gln Glu Gly Met
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Glu Met Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Ser Gln Gly
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Lys Ile Ala Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys
195 200 205
Ile Asp Glu Lys Ser Glu Thr Glu Lys Leu Leu Glu Tyr Ile Glu Glu
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225 230 235 240
Gln Leu Glu Glu Asn Leu Lys Glu Lys Asn Asp Glu Ile Leu Ser Leu
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Lys Gln Ser Leu Glu Glu Asn Ile Val Ile Leu Ser Lys Gln Val Glu
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 645 650 655
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 Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr
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<210> 366
 <211> 2957
 <212> DNA
 <213> Homo sapiens

<400> 366

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 <213> Homo sapiens

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 <212> DNA
 <213> Homo sapiens

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 Thr Tyr Asp Ala Pro Ser Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu
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 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
 65 70 75 80
 Arg Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95
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Lys Glu Asn Val Val Ala Lys Gln Cys Thr Gln Ala Thr Leu Asp Ser
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 Cys Glu Glu Asn Met Val Val Pro Ser Arg Asp Gly Lys Phe Ser Pro
 645 650 655
 Ile Gln Glu Lys Ser Pro Lys Gln Ala Leu Ser Ser His Met Tyr Ser
 660 665 670
 Ala Ser Leu Leu Arg Leu Ser Gln Pro Ala Ala Gly Gly Val Leu Thr
 675 680 685
 Cys Glu Ala Glu Leu Gly Val Glu Ala Cys Arg Leu Thr Asp Thr Asp
 690 695 700
 Ala Ala Ile Ala Glu Asp Pro Pro Asp Ala Ile Ala Gly Leu Gln Ala
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 Glu Trp Met Gln Met Ser Ser Leu Gly Thr Val Asp Ala Pro Asn Phe
 725 730 735
 Ile Val Gly Asn Pro Trp Asp Asp Lys Leu Ile Phe Lys Leu Leu Ser
 740 745 750
 Gly Leu Ser Lys Pro Val Ser Ser Tyr Pro Asn Thr Phe Glu Trp Gln
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 Cys Lys Leu Pro Ala Ile Lys Pro Lys Thr Glu Phe Gln Leu Gly Ser
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<400> 374

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 645 650 655
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 Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro Ser
 675 680 685
 Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr Pro
 690 695 700
 Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys Gln
 705 710 715 720
 Glu Ser Trp Lys

<210> 376
 <211> 3002
 <212> DNA

<213> Homo sapiens

<400> 376

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ttagaagtag tgaagggacc agtatccctt cagaaatcac aaagatttaa acaacaaaaa 180
gaatctaacc aaaatcttaa tgttgacaaa gatactacct tgctgtcttc agctagaaaa 240
gttaagtcct cggaatcaaa ggaatctcaa aagaatgata aagatttgaa gatattagag 300
aaagagattc gtgttcttct acaggaacgt ggtgcccagg acagccggat ccaggatctg 360
gaaactgagt tggaaaagat ggaagcaagg ctaaatgctg cactaaggga aaaaacatct 420
ctctctgcaa ataatgctac actggaaaaa caacttattg aattgaccag gactaatgaa 480
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gagtttgatga aacttagaaa caaaagagaa acaaatgatg ggggtatgat ggctaagcaa 600
gaaggcatgg agatgaagct gcaggtcacc caaaggagtc tcgaagagtc tcaagggaaa 660
atagcccacac tggagggaaa acttgttttc atagagaaag aaaagattga tgaaaaatct 720
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gaacacaacg aaaatctaaa tgcagagatg caaaacttaa acagaaagt tattcttgaa 1020
caacaggaac gtgaaaagct tcaacaaaaa gaattacaaa ttgattcact tctgcaacaa 1080
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gagacaaaac ttcaagagga attgaataaa gttctaggta tcaaacactt tgatccttca 2100
aaggcttttc atcatgaaag taaagaaaat ttgcccctga agacccattt aaaagaaggc 2160
aatacaaaat gttaccgagc tccatgggag tgtcaagaat catggaagta aacatctgag 2220
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gacatgggta ttttataatg ttgtatttaa ttttaactgc caatccttaa atatgtgaaa 2340
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aa 3002

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<210> 377

<211> 246

<212> PRT
<213> Homo sapiens

<400> 377

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Met Asn Asp Trp Met Pro Ile Ala Lys Glu Tyr Asp Pro Leu Lys Ala
 1           5           10           15
Gly Ser Ile Asp Gly Thr Asp Glu Asp Pro His Asp Arg Ala Val Trp
          20           25           30
Arg Ala Met Leu Ala Arg Tyr Val Pro Asn Lys Gly Val Ile Gly Asp
          35           40           45
Pro Leu Leu Thr Leu Phe Val Ala Arg Leu Asn Leu Gln Thr Lys Glu
          50           55           60
Asp Lys Leu Lys Glu Val Phe Ser Arg Tyr Gly Asp Ile Arg Arg Leu
65           70           75           80
Arg Leu Val Arg Asp Leu Val Thr Gly Phe Ser Lys Gly Tyr Ala Phe
          85           90           95
Ile Glu Tyr Lys Glu Glu Arg Ala Val Ile Lys Ala Tyr Arg Asp Ala
          100          105          110
Asp Gly Leu Val Ile Asp Gln His Glu Ile Phe Val Asp Tyr Glu Leu
          115          120          125
Glu Arg Thr Leu Lys Gly Trp Ile Pro Arg Arg Leu Gly Gly Gly Leu
          130          135          140
Gly Gly Lys Lys Glu Ser Gly Gln Leu Arg Phe Gly Gly Arg Asp Arg
145          150          155          160
Pro Phe Arg Lys Pro Ile Asn Leu Pro Val Val Lys Asn Asp Leu Tyr
          165          170          175
Arg Glu Gly Lys Arg Glu Arg Arg Glu Arg Ser Arg Ser Arg Glu Arg
          180          185          190
His Trp Asp Ser Arg Thr Arg Asp Arg Asp His Asp Arg Gly Arg Glu
          195          200          205
Lys Arg Trp Gln Glu Arg Glu Pro Thr Arg Val Trp Pro Asp Asn Asp
          210          215          220
Trp Glu Arg Glu Arg Asp Phe Arg Asp Asp Arg Ile Lys Gly Arg Glu
225          230          235          240
Lys Lys Glu Arg Gly Lys
          245

```

<210> 378
<211> 1509
<212> DNA
<213> Homo sapiens

<400> 378

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ggcgaatctg ctgctaccaa tgtaaaggctc aggcgcgaggc cggcgcgaggag aatctgctgt 60
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gagtcgccc ggtcgggag cgggtggcg atctcggtc actgcagcgt cgacatttcg 180
ggccaagcga tctccagcc tcggcctctc aaagtgtctg tattacaggc gtgagccagc 240
gcgtgcctgg ccaaaaattt tctaaatttg tataataatt tataattgta atgcattttt 300
atagacacca tatgatctaa tcttcacaaa aacctagtga agtgacattt agctacattt 360
cacaataaga atcctgaagc tcaaaattta ctgacctcaa ataatcccag cactttggga 420
ggctgaggca ggcgggtcat ctgacatcac gagtttgaga ccagcttggc caacatggtg 480
aaatcctgtc tgtactaaaa atgcaaaaat tagctgggag tgggtggtgtg tgtctgtaat 540
cccagctact cggcctccca aagtgtctggg attacaggcg tgagccaccg cgtctggcct 600
cagccaaagg ttttaagtaa catatttcag cattggctct acagcgttgc agaacatgaa 660
cgattggatg cccatcgcca aggagtatga tccactcaaa gcgggcagca ttgatggcac 720
cgatgaagac ccacacgacc gcgcgggtctg gagggcaatg ctggcacgat atgtccccaa 780

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```

caaaggtgtc ataggagatc cctcctcac cctgtttgtg gccagactaa acttgcagac 840
caaggaggac aaattaaagg aagtcttttc ccgctatggt gacatccggc ggcttcggct 900
ggtcagggac ttggtcacag gtttttcaaa gggctacgcc ttcacgaat acaaggagga 960
gcgtgccgtg atcaaagctt accgagatgc tgatggcctg gttattgacc agcatgagat 1020
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cggtcttggg ggaaaaaagg agtctgggca actgagattt gggggacggg accggccttt 1140
tcgaaaacct attaaactgc cagttgttaa aaacgacctc tatagagagg gaaaacggga 1200
aaggcgggag cgatctcgat cccgagaaag aactggggac tcgaggacaa gggatcgaga 1260
ccatgacagg ggccgggaga agagatggca agaaagagag ccgaccaggg tgtggcccga 1320
caatgactgg gagagagaga gggacttcag agatgacagg atcaagggga gggagaagaa 1380
ggaaagaggc aagttagagg ccaacagcag aaccccaaag tgaagttaca gtggaaatga 1440
gtggaggggg attgtctttc aacgcagcgt gagtctaagt gttgaataaa acttactgat 1500
gatcaaaaaa
1509

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<210> 379
<211> 246
<212> PRT
<213> Homo sapiens

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<400> 379
Met Asn Asp Trp Met Pro Ile Ala Lys Glu Tyr Asp Pro Leu Lys Ala
1      5      10      15
Gly Ser Ile Asp Gly Thr Asp Glu Asp Pro His Asp Arg Ala Val Trp
20     25     30
Arg Ala Met Leu Ala Arg Tyr Val Pro Asn Lys Gly Val Ile Gly Asp
35     40     45
Pro Leu Leu Thr Leu Phe Val Ala Arg Leu Asn Leu Gln Thr Lys Glu
50     55     60
Asp Lys Leu Lys Glu Val Phe Ser Arg Tyr Gly Asp Ile Arg Arg Leu
65     70     75     80
Arg Leu Val Arg Asp Leu Val Thr Gly Phe Ser Lys Gly Tyr Ala Phe
85     90     95
Ile Glu Tyr Lys Glu Glu Arg Ala Val Ile Lys Ala Tyr Arg Asp Ala
100    105    110
Asp Gly Leu Val Ile Asp Gln His Glu Ile Phe Val Asp Tyr Glu Leu
115    120    125
Glu Arg Thr Leu Lys Gly Trp Ile Pro Arg Arg Leu Gly Gly Gly Leu
130    135    140
Gly Gly Lys Lys Glu Ser Gly Gln Leu Arg Phe Gly Gly Arg Asp Arg
145    150    155    160
Pro Phe Arg Lys Pro Ile Asn Leu Pro Val Val Lys Asn Asp Leu Tyr
165    170    175
Arg Glu Gly Lys Arg Glu Arg Arg Glu Arg Ser Arg Ser Arg Glu Arg
180    185    190
His Trp Asp Ser Arg Thr Arg Asp Arg Asp His Asp Arg Gly Arg Glu
195    200    205
Lys Arg Trp Gln Glu Arg Glu Pro Thr Arg Val Trp Pro Asp Asn Asp
210    215    220
Trp Glu Arg Glu Arg Asp Phe Arg Asp Asp Arg Ile Lys Gly Arg Glu
225    230    235    240
Lys Lys Glu Arg Gly Lys
245

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<210> 380
<211> 967
<212> DNA

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<213> Homo sapiens

<400> 380

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acgattggat gcccatcgcc aaggagtatg atccactcaa agcgggcagc attgatggca 180
ccgatgaaga cccacacgac cgccgcgtct ggagggcaat gctggcacga tatgtcccca 240
acaagggtgt cataggagat cccctcctca cctgtttgtt gccagacta aacttgacga 300
ccaaggaggga caaattaaag gaagtctttt cccgctatgg tgacatccgg cggtctcgcc 360
tggtcaggga cttgggtcaca ggtttttcaa agggctaagc cttcatcgaa tacaaggagg 420
agcgtgccgt gatcaaagct taccgagatg ctgatggcct ggttattgac cagcatgaga 480
tatttgtgga ctacgagctg gaaaggactc tcaaagggtg gatccctcgg cgacttggag 540
gcggtcttgg gggaaaaaag gagtctgggc aactgagatt tgggggacgg gaccggcctt 600
ttcgaaaacc tattaacttg ccagttgtta aaaacgacct ctatagagag ggaaaacggg 660
aaaggcggga gcgatctcga tcccagagaa gacactggga ctgaggaga agggatcgag 720
accatgacag gggccgggag aagagatggc aagaaagaga gccgaccagg gtgtggcccc 780
acaatgactg ggagagagag agggacttca gagatgacag gatcaagggg agggagaaga 840
aggaaaggag caagtagagg cccaacagca gaaccccaa gtgaagttac agtggaatg 900
agtggagggg gattgtcttt caacgcagcg tgagtctaag ggttgaataa aacttactga 960
tgatcaa

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967

<210> 381

<211> 226

<212> PRT

<213> Homo sapiens

<400> 381

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Met Ser Glu Thr Ala Pro Ala Glu Thr Ala Thr Pro Ala Pro Val Glu
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Lys Ser Pro Ala Lys Lys Lys Ala Thr Lys Lys Ala Ala Gly Ala Gly
 20          25          30
Ala Ala Lys Arg Lys Ala Thr Gly Pro Pro Val Ser Glu Leu Ile Thr
 35          40          45
Lys Ala Val Ala Ala Ser Lys Glu Arg Asn Gly Leu Ser Leu Ala Ala
 50          55          60
Leu Lys Lys Ala Leu Ala Gly Gly Tyr Asp Val Glu Lys Asn Asn
 65          70          75          80
Ser Arg Ile Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu
 85          90          95
Val Gln Thr Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys
100          105          110
Lys Ala Ala Ser Gly Glu Ala Lys Pro Lys Ala Lys Lys Ala Gly Ala
115          120          125
Ala Lys Ala Lys Lys Pro Ala Gly Ala Thr Pro Lys Lys Ala Lys Lys
130          135          140
Ala Ala Gly Ala Lys Lys Ala Val Lys Lys Thr Pro Lys Lys Ala Lys
145          150          155          160
Lys Pro Ala Ala Ala Gly Val Lys Lys Val Ala Lys Ser Pro Lys Lys
165          170          175
Ala Lys Ala Ala Ala Lys Pro Lys Lys Ala Thr Lys Ser Pro Ala Lys
180          185          190
Pro Lys Ala Val Lys Pro Lys Ala Ala Lys Pro Lys Ala Ala Lys Pro
195          200          205
Lys Ala Ala Lys Pro Lys Ala Ala Lys Ala Lys Lys Ala Ala Ala Lys
210          215          220
Lys Lys
225

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<210> 382
 <211> 790
 <212> DNA
 <213> Homo sapiens

<400> 382
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 aaccgctcct gccgagacag ccaccccagc gccggtggag aaatccccgg ctaagaagaa 120
 ggcaactaag aaggctgcgc gccgcggcgc tgctaagcgc aaagcgacgg ggccccagtg 180
 ctcagagctg atcaccaagg ctgtggctgc ttctaaggag cgcaatggcc tttctttggc 240
 agcccttaag aaggccttag cggcgggtgg ctacgacgtg gagaagaata acagccgcat 300
 taagctgggc ctcaagagct tggtagagcaa gggcaccctg gtgcagacca agggcactgg 360
 tgcttctggc tcctttaaac tcaacaagaa ggcggcctcc ggggaagcca agcccaaagc 420
 caagaaggca ggcgcgcta aagctaagaa gccgcgggg gccacgccta agaaggccaa 480
 gaaggctgca gggcgcaaaa aggcagtgaa gaagactccg aagaaggcga agaagccgc 540
 ggcggctggc gtcaaaaagg tggcgaagag ccctaagaag gccaaaggccg ctgccaaacc 600
 gaaaaaggca accaagagtc ctgccaaagg caaggcagtt aagccgaagg cggcaaaagg 660
 caaagcgcgt aagcccaagg cagcaaaacc taaagctgca aaggccaaga aggcggctgc 720
 caaaaagaag taggaagctg gcgtgtgaaa accgcaacaa agccccaag gctcttttca 780
 gagccacca 790

<210> 383
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 383
 Met Ala Thr Leu Ile Tyr Val Asp Lys Glu Asn Glu Glu Pro Gly Ile
 1 5 10 15
 Leu Val Ala Thr Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile
 20 25 30
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Ile Ser Cys Phe Gly Lys
 35 40 45
 Thr Phe Asp Ala Pro Thr Ser Leu Pro Lys Ala Thr Arg Lys Ala Leu
 50 55 60
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
 65 70 75 80
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95
 Thr Val Lys Ala Lys Asn Ser Val Pro Ala Ser Asp Asp Gly Tyr Pro
 100 105 110
 Glu Ile Glu Lys Leu Phe Pro Phe Asn Pro Leu Gly Phe Glu Ser Phe
 115 120 125
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Glu Val
 130 135 140
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln
 145 150 155 160
 Leu Gly Pro Pro Ser Pro Leu Lys Met Pro Ser Pro Pro Trp Lys Ser
 165 170 175
 Asn Leu Leu Gln Ser Pro Leu Ser Ile Leu Leu Thr Leu Asp Val Glu
 180 185 190
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile
 195 200

<210> 384
 <211> 609
 <212> DNA
 <213> Homo sapiens

<400> 384
 atggctactc tgatctatgt tgataaggaa aacgaagaac caggcatcct tgtgggtaca 60
 aaggatgggc tgaagctggg gtctggacct tcaatcaaag ccttagatgg gagatctcaa 120
 gtttcaatat catgttttgg caaaacattc gatgctccca catccttacc taaagctacc 180
 agaaaggctt tgggaactgt caacagagct acagaaaagt cagtaaagac caatggaccc 240
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 aaaaactctg ttctgcctc agatgatggc tatccagaaa tagaaaaatt atttcccttc 360
 aatcctctag gcttcgagag ttttgacctg cctgaagagc accagattgc acatctcccc 420
 ttgagtgaag tgctctctcat gatacttgat gaggagagag agcttgaaaa gctgtttcag 480
 ctgggcccc cttcaccttt gaagatgccc tctccacat ggaatccaa tctgttgcag 540
 tctcctttaa gcattctgtt gacctggat gttgaattgc cactgtttt ctgtgacata 600
 gatatttaa 609

<210> 385
 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 385
 Met Glu Gly Ile Ser Asn Phe Lys Thr Pro Ser Lys Leu Ser Glu Lys
 1 5 10 15
 Lys Lys Ser Val Leu Cys Ser Thr Pro Thr Ile Asn Ile Pro Ala Ser
 20 25 30
 Pro Phe Met Gln Lys Leu Gly Phe Gly Thr Gly Val Asn Val Tyr Leu
 35 40 45
 Met Lys Arg Ser Pro Arg Gly Leu Ser His Ser Pro Trp Ala Val Lys
 50 55 60
 Lys Ile Asn Pro Ile Cys Asn Asp His Tyr Arg Ser Val Tyr Gln Lys
 65 70 75 80
 Arg Leu Met Asp Glu Ala Lys Ile Leu Lys Ser Leu His His Pro Asn
 85 90 95
 Ile Val Gly Tyr Arg Ala Phe Thr Glu Ala Asn Asp Gly Ser Leu Cys
 100 105 110
 Leu Ala Met Glu Tyr Gly Gly Glu Lys Ser Leu Asn Asp Leu Ile Glu
 115 120 125
 Glu Arg Tyr Lys Ala Ser Gln Asp Pro Phe Pro Ala Ala Ile Ile Leu
 130 135 140
 Lys Val Ala Leu Asn Met Ala Arg Gly Leu Lys Tyr Leu His Gln Glu
 145 150 155 160
 Lys Lys Leu Leu His Gly Asp Ile Lys Ser Ser Asn Val Val Ile Lys
 165 170 175
 Gly Asp Phe Glu Thr Ile Lys Ile Cys Asp Val Gly Val Ser Leu Pro
 180 185 190
 Leu Asp Glu Asn Met Thr Val Thr Asp Pro Glu Ala Cys Tyr Ile Gly
 195 200 205
 Thr Glu Pro Trp Lys Pro Lys Glu Ala Val Glu Glu Asn Gly Val Ile
 210 215 220
 Thr Asp Lys Ala Asp Ile Phe Ala Phe Gly Leu Thr Leu Trp Glu Met
 225 230 235 240
 Met Thr Leu Ser Ile Pro His Ile Asn Leu Ser Asn Asp Asp Asp Asp
 245 250 255
 Glu Asp Lys Thr Phe Asp Glu Ser Asp Phe Asp Asp Glu Ala Tyr Tyr

	260		265		270										
Ala	Ala	Leu	Gly	Thr	Arg	Pro	Pro	Ile	Asn	Met	Glu	Glu	Leu	Asp	Glu
	275					280					285				
Ser	Tyr	Gln	Lys	Val	Ile	Glu	Leu	Phe	Ser	Val	Cys	Thr	Asn	Glu	Asp
	290					295					300				
Pro	Lys	Asp	Arg	Pro	Ser	Ala	Ala	His	Ile	Val	Glu	Ala	Leu	Glu	Thr
	305				310					315				320	
Asp	Val														

<210> 386
 <211> 1899
 <212> DNA
 <213> Homo sapiens

<400> 386
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 gtgttgggtgc tagaggcagc tgcagggtct cgctgggggc cgctcgggac caattttgaa 120
 gaggtacttg gccacgactt atttcacct cggacctttc ttccaggcg gtgagactct 180
 ggactgagag tggctttcac aatggaagg atcagtaatt tcaagacacc aagcaaat 240
 tcagaaaaaa agaaatctgt attatgttca actccaacta taaatatccc ggcctctccg 300
 tttatgcaga agcttggctt tgggtactgg gttaaatgtgt acctaatgaa aagatctcca 360
 agagggttgt ctcatctccc ttgggctgta aaaaagatta atcctatatg taatgatcat 420
 tatcgaagtg tgtatcaaaa gagactaatg gatgaagcta agattttgaa aagccttcat 480
 catccaaaca ttgttgggta tcgtgctttt actgaagcca atgatggcag tctgtgtctt 540
 gctatggaat atggagggtga aaagtctcta aatgacttaa tagaagaacg atataaagcc 600
 agccaagatc cttttccagc agccataatt ttaaaagttg ctttgaatat ggcaagaggg 660
 ttaaagtatc tgcaccaaga aaagaaactg cttcatggag acataaagtc ttcaaatggt 720
 gtaattaaag gcgattttga aacaattaaa atctgtgatg taggagtctc tctaccactg 780
 gatgaaaaata tgactgtgac tgacctgag gcttgttaca ttggcacaga gccatggaaa 840
 cccaaagaag ctgtggagga gaatgggtgt attactgaca aggcagacat atttgccttt 900
 ggccttactt tgtgggaaat gatgacttta tcgattccac acattaatct ttcaaatgat 960
 gatgatgatg aagataaaac ttttgatgaa agtgattttg atgatgaagc atactatgca 1020
 gcgttgggaa ctaggccacc tattaatatg gaagaactgg atgaatcata ccagaaagta 1080
 attgaactct tctctgtatg cactaatgaa gaccctaaag atcgctcttc tgcgtcacac 1140
 attgttgaag ctctggaac agatgtctag tgatcatctc agctgaagtg tggcttgcgt 1200
 aaataactgt ttattccaaa atatttacct agttactatc agtagttatt agactctaaa 1260
 attggcatat ttgaggacca tagtttcttg ttaacatatg gataactatt tctaatatga 1320
 aatatgctta tattggctat aagcacttgg aattgtactg ggttttctgt aaagttttag 1380
 aaactagcta cataagtact ttgatactgc tcatgctgac ttaaaacact agcagtaaaa 1440
 cgctgtaaac tgtaacatta aattgaatga ccattacttt tattaatgat ctttcttaaa 1500
 tattctatat tttaatggat ctactgacat tagcactttg tacagtacaa aataaagtct 1560
 acatttggttt aaaaactgaa accttttgct gatgtgttta tcaaatgata actggaagct 1620
 gaggagaata tgctcctaaa agagttagctc cttggatact tcagactctgt gttacagatt 1680
 gtcttgatct cttggatctc ctccagatctt tggtttttgc tttaatttat taaatgtatt 1740
 ttccatactg agtttaaaat ttattaattt gtaccttaag catttcccag ctgtgtaaaa 1800
 acaataaaac tcaaatagga tgataaagaa taaaggacac ttgggtgacc agaaaaaaa 1860
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1899

<210> 387
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 387
 Met Ala Thr Leu Ile Tyr Val Asp Lys Glu Asn Gly Glu Pro Gly Thr

1	5	10	15
Arg Val Val	Ala Lys Asp Gly Leu	Lys Leu Gly Ser Gly	Pro Ser Ile
	20	25	30
Lys Ala Leu	Asp Gly Arg Ser Gln	Val Ser Thr Pro Arg	Phe Gly Lys
	35	40	45
Thr Phe Asp	Ala Pro Pro Ala Leu	Pro Lys Ala Thr Arg	Lys Ala Leu
	50	55	60
Gly Thr Val	Asn Arg Ala Thr Glu	Lys Ser Val Lys Thr	Lys Gly Pro
	65	70	75
Leu Lys Gln	Lys Gln Pro Ser Phe Ser	Ala Lys Lys Met Thr	Glu Lys
	85	90	95
Thr Val Lys	Ala Lys Ser Ser Val Pro	Ala Ser Asp Asp Ala Tyr	Pro
	100	105	110
Glu Ile Glu	Lys Phe Phe Pro Phe Asn	Pro Leu Asp Phe Glu Ser	Phe
	115	120	125
Asp Leu Pro	Glu Glu His Gln Ile Ala His	Leu Pro Leu Ser Gly Val	
	130	135	140
Pro Leu Met	Ile Leu Asp Glu Glu Arg Glu	Leu Glu Lys Leu Phe Gln	
	145	150	155
Leu Gly Pro	Pro Ser Pro Val Lys Met Pro	Ser Pro Pro Trp Glu Ser	
	165	170	175
Asn Leu Leu	Gln Ser Pro Ser Ser Ile Leu	Ser Thr Leu Asp Val Glu	
	180	185	190
Leu Pro Pro	Val Cys Cys Asp Ile Asp Ile		
	195	200	

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 <211> 728
 <212> DNA
 <213> Homo sapiens

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Val Ala Ala Ser Lys Glu Arg Ser Gly Val Ser Leu Ala Ala Leu Lys
 50 55 60
 Lys Ala Leu Ala Ala Ala Gly Tyr Asp Val Glu Lys Asn Asn Ser Arg
 65 70 75 80
 Ile Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu Val Gln
 85 90 95
 Thr Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys Lys Ala
 100 105 110
 Ala Ser Gly Glu Gly Lys Pro Lys Ala Lys Lys Ala Gly Ala Ala Lys
 115 120 125
 Pro Arg Lys Pro Ala Gly Ala Ala Lys Lys Pro Lys Lys Val Ala Gly
 130 135 140
 Ala Ala Thr Pro Lys Lys Ser Ile Lys Lys Thr Pro Lys Lys Val Lys
 145 150 155 160
 Lys Pro Ala Thr Ala Ala Gly Thr Lys Lys Val Ala Lys Ser Ala Lys
 165 170 175
 Lys Val Lys Thr Pro Gln Pro Lys Lys Ala Ala Lys Ser Pro Ala Lys
 180 185 190
 Ala Lys Ala Pro Lys Pro Lys Ala Ala Lys Pro Lys Ser Gly Lys Pro
 195 200 205
 Lys Val Thr Lys Ala Lys Lys Ala Ala Pro Lys Lys Lys
 210 215 220

<210> 390
 <211> 777
 <212> DNA
 <213> Homo sapiens

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<210> 391
 <211> 846
 <212> PRT
 <213> Homo sapiens

<400> 391
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Gly Ile Lys Glu Thr Thr Cys Thr Asp Leu Asp Gly Phe Trp Asp Met
 500 505 510
 Val Ser Phe Gln Ile Glu Asp Val Ile His Lys Phe Asn Asn Leu Ile
 515 520 525
 Lys Leu Glu Glu Ser Gly Trp Gln Val Asn Asn Asn Met Asn His Asn
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 Met Asn Lys Asn Val Phe Arg Lys Lys Val Val Ser Gly Ile Ala Ser
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 Lys Pro Lys Gln Asp Asp Ala Gly Arg Ile Ala Ala Arg Asn Arg Leu
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 595 600 605
 Phe Asp Ala Gly Phe Phe Arg Val Glu Ser Pro Val Lys Leu Phe Ser
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<210> 392
 <211> 2979
 <212> DNA
 <213> Homo sapiens

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<210> 393
 <211> 450
 <212> PRT
 <213> Homo sapiens

<400> 393
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35	40	45
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50	55	60
Phe Tyr Glu Asp Ser Asp Asn Glu Ser Phe Cys Gly Phe Ser Glu Ser		
65	70	75
Glu Val Gln Asp Val Leu Asp His Cys Gly Phe Leu Gln Lys Pro Arg		80
	85	90
Pro Asp Val Thr Asn Glu Leu Ala Gly Ile Phe His Ala Asp Ser Asp		95
	100	105
Asp Glu Ser Phe Cys Gly Phe Ser Glu Ser Glu Ile Gln Asp Gly Met		110
	115	120
Arg Leu Gln Ser Val Arg Glu Gly Cys Arg Thr Arg Ser Gln Cys Arg		125
	130	135
His Ser Gly Pro Leu Arg Val Ala Met Lys Phe Pro Ala Arg Ser Thr		140
	145	150
Arg Gly Ala Thr Asn Lys Lys Ala Glu Ser Arg Gln Pro Ser Glu Asn		155
	165	170
Ser Val Thr Asp Ser Asn Ser Asp Ser Glu Asp Glu Ser Gly Met Asn		175
	180	185
Phe Leu Glu Lys Arg Ala Leu Asn Ile Lys Gln Asn Lys Ala Met Leu		190
	195	200
Ala Lys Leu Met Ser Glu Leu Glu Ser Phe Pro Gly Ser Phe Arg Gly		205
	210	215
Arg His Pro Leu Pro Gly Ser Asp Ser Gln Ser Arg Arg Pro Arg Arg		220
	225	230
Arg Thr Phe Pro Gly Val Ala Ser Arg Arg Asn Pro Glu Arg Arg Ala		235
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	260	265
Leu Pro Met Glu Glu Glu Glu Glu Asp Lys Tyr Met Leu Val Arg		270
	275	280
Lys Arg Lys Thr Val Asp Gly Tyr Met Asn Glu Asp Asp Leu Pro Arg		285
	290	295
Ser Arg Arg Ser Arg Ser Ser Val Thr Leu Pro His Ile Ile Arg Pro		300
	305	310
Val Glu Glu Ile Thr Glu Glu Glu Leu Glu Asn Val Cys Ser Asn Ser		315
	325	330
Arg Glu Lys Ile Tyr Asn Arg Ser Leu Gly Ser Thr Cys His Gln Cys		335
	340	345
Arg Gln Lys Thr Ile Asp Thr Lys Thr Asn Cys Arg Asn Pro Asp Cys		350
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Trp Gly Val Arg Gly Gln Phe Cys Gly Pro Cys Leu Arg Asn Arg Tyr		365
	370	375
Gly Glu Glu Val Arg Asp Ala Leu Leu Asp Pro Asn Trp His Cys Pro		380
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Pro Cys Arg Gly Ile Cys Asn Cys Ser Phe Cys Arg Gln Arg Asp Gly		395
	405	410
Arg Cys Ala Thr Gly Val Leu Val Tyr Leu Ala Lys Tyr His Gly Phe		415
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<210> 394
<211> 2824

<212> DNA
<213> Homo sapiens

<400> 394

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<210> 395
<211> 142
<212> PRT
<213> Homo sapiens

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 35 40 45
 Glu Asn Glu Pro Asp Leu Ala Gln Cys Phe Phe Cys Phe Lys Glu Leu
 50 55 60
 Glu Gly Trp Glu Pro Asp Asp Asp Pro Ile Glu Glu His Lys Lys His
 65 70 75 80
 Ser Ser Gly Cys Ala Phe Leu Ser Val Lys Lys Gln Phe Glu Glu Leu
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 Thr Leu Gly Glu Phe Leu Lys Leu Asp Arg Glu Arg Ala Lys Asn Lys
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<210> 396
 <211> 1619
 <212> DNA
 <213> Homo sapiens

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<210> 397

<211> 1401
 <212> PRT
 <213> Homo sapiens

<400> 397

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 ctgaatcagt tatcaaatgat aaattggcaa gtcagtactt aagaaaaaag atttgattat 1440
 catcacagca gaaaaaagtc attgcatatc tgatcaataa cttcagattc taagagtggg 1500
 tttttttttt tttacatggg ctccatattt ttccctact gtcttgcat ataaaattag 1560
 aagtgtattt tcagtggag aaacattttt caataaataa agtaaggcat tgtcatcaat 1620
 gaagtaatta aaactgggac ctgatctatg atacgctttt ttctttcatt acaccctagc 1680
 tgaaggacat ccagttcccc agctgtagtt atgtatctgc cttcaagtct ctgacaaatg 1740
 tgctgtgtta gtagagtttg atttgtatca tatgataatc ttgcacttga ctgagttggg 1800
 acaaggcttc acataaaaaa ttatttcttc acttttaaca caagttagaa attatatccc 1860
 atttagttaa atgcgtgatt tatattcaga acaacctact atgtagcgtt tattttactg 1920
 aatgtggaga tttaaacact gaggtttctg ttcaaatgt gagttctggt cttgtgtaga 1980
 aattttacat atattggaag tgaaaatatg ttctgagtaa acaaatattg ctatgggagt 2040
 tatcttttta gatttagaat aactgttcca atgataatta ttacttttat atttcaaagt 2100
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 ggcattc 2167

<210> 401
 <211> 823
 <212> PRT
 <213> Homo sapiens

<400> 401
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 Ser Glu Thr Leu Glu Pro Val Cys Arg His Ile Arg Lys Gly Leu Glu
 20 25 30
 Gln Gly Asn Leu Lys Lys Ala Leu Val Asn Val Glu Trp Asn Ile Cys
 35 40 45
 Gln Asp Cys Lys Thr Asp Asn Lys Val Lys Asp Lys Ala Glu Glu Glu
 50 55 60
 Thr Glu Glu Lys Pro Ser Val Trp Leu Cys Leu Lys Cys Gly His Gln
 65 70 75 80
 Gly Cys Gly Arg Asn Ser Gln Glu Gln His Ala Leu Lys His Tyr Leu
 85 90 95
 Thr Pro Arg Ser Glu Pro His Cys Leu Val Leu Ser Leu Asp Asn Trp
 100 105 110
 Ser Val Trp Cys Tyr Val Cys Asp Asn Glu Val Gln Tyr Cys Ser Ser
 115 120 125
 Asn Gln Leu Gly Gln Val Val Asp Tyr Val Arg Lys Gln Ala Ser Ile
 130 135 140
 Thr Thr Pro Lys Pro Ala Glu Lys Asp Asn Gly Asn Ile Glu Leu Glu
 145 150 155 160
 Asn Lys Lys Leu Glu Lys Glu Ser Lys Asn Glu Gln Glu Arg Glu Lys
 165 170 175
 Lys Glu Asn Met Ala Lys Glu Asn Pro Pro Met Asn Ser Pro Cys Gln
 180 185 190
 Ile Thr Val Lys Gly Leu Ser Asn Leu Gly Asn Thr Cys Phe Phe Asn
 195 200 205
 Ala Val Met Gln Asn Leu Ser Gln Thr Pro Val Leu Arg Glu Leu Leu
 210 215 220
 Lys Glu Val Lys Met Ser Gly Thr Ile Val Lys Ile Glu Pro Pro Asp
 225 230 235 240

Leu Ala Leu Thr Glu Pro Leu Glu Ile Asn Leu Glu Pro Pro Gly Pro
 245 250 255
 Leu Thr Leu Ala Met Ser Gln Phe Leu Asn Glu Met Gln Glu Thr Lys
 260 265 270
 Lys Gly Val Val Thr Pro Lys Glu Leu Phe Ser Gln Val Cys Lys Lys
 275 280 285
 Ala Val Arg Phe Lys Gly Tyr Gln Gln Asp Ser Gln Glu Leu Leu
 290 295 300
 Arg Tyr Leu Leu Asp Gly Met Arg Ala Glu Glu His Gln Arg Val Ser
 305 310 315 320
 Lys Gly Ile Leu Lys Ala Phe Gly Asn Ser Thr Glu Lys Leu Asp Glu
 325 330 335
 Glu Leu Lys Asn Lys Val Lys Asp Tyr Glu Lys Lys Lys Ser Met Pro
 340 345 350
 Ser Phe Val Asp Arg Ile Phe Gly Gly Glu Leu Thr Ser Met Ile Met
 355 360 365
 Cys Asp Gln Cys Arg Thr Val Ser Leu Val His Glu Ser Phe Leu Asp
 370 375 380
 Leu Ser Leu Pro Val Leu Asp Asp Gln Ser Gly Lys Lys Ser Val Asn
 385 390 395 400
 Asp Lys Asn Leu Lys Lys Thr Val Glu Asp Glu Asp Gln Asp Ser Glu
 405 410 415
 Glu Glu Lys Asp Asn Asp Ser Tyr Ile Lys Glu Arg Ser Asp Ile Pro
 420 425 430
 Ser Gly Thr Ser Lys His Leu Gln Lys Lys Ala Lys Lys Gln Ala Lys
 435 440 445
 Lys Gln Ala Lys Asn Gln Arg Arg Gln Gln Lys Ile Gln Gly Lys Val
 450 455 460
 Leu His Leu Asn Asp Ile Cys Thr Ile Asp His Pro Glu Asp Ser Glu
 465 470 475 480
 Tyr Glu Ala Glu Met Ser Leu Gln Gly Glu Val Asn Ile Lys Ser Asn
 485 490 495
 His Ile Ser Gln Glu Gly Val Met His Lys Glu Tyr Cys Val Asn Gln
 500 505 510
 Lys Asp Leu Asn Gly Gln Ala Lys Met Ile Glu Ser Val Thr Asp Asn
 515 520 525
 Gln Lys Ser Thr Glu Glu Val Asp Met Lys Asn Ile Asn Met Asp Asn
 530 535 540
 Asp Leu Glu Val Leu Thr Ser Ser Pro Thr Arg Asn Leu Asn Gly Ala
 545 550 555 560
 Tyr Leu Thr Glu Gly Ser Asn Gly Glu Val Asp Ile Ser Asn Gly Phe
 565 570 575
 Lys Asn Leu Asn Leu Asn Ala Ala Leu His Pro Asp Glu Ile Asn Ile
 580 585 590
 Glu Ile Leu Asn Asp Ser His Thr Pro Gly Thr Lys Val Tyr Glu Val
 595 600 605
 Val Asn Glu Asp Pro Glu Thr Ala Phe Cys Thr Leu Ala Asn Arg Glu
 610 615 620
 Val Phe Asn Thr Asp Glu Cys Ser Ile Gln His Cys Leu Tyr Gln Phe
 625 630 635 640
 Thr Arg Asn Glu Lys Leu Arg Asp Ala Asn Lys Leu Leu Cys Glu Val
 645 650 655
 Cys Thr Arg Arg Gln Cys Asn Gly Pro Lys Ala Asn Ile Lys Gly Glu
 660 665 670
 Arg Lys His Val Tyr Thr Asn Ala Lys Lys Gln Met Leu Ile Ser Leu
 675 680 685
 Ala Pro Pro Val Leu Thr Leu His Leu Lys Arg Phe Gln Gln Ala Gly

690		695		700
Phe Asn Leu Arg Lys Val Asn Lys His Ile Lys Phe Pro Glu Ile Leu				
705		710		720
Asp Leu Ala Pro Phe Cys Thr Leu Lys Cys Lys Asn Val Ala Glu Glu				
	725		730	735
Asn Thr Arg Val Leu Tyr Ser Leu Tyr Gly Val Val Glu His Ser Gly				
	740		745	750
Thr Met Arg Ser Gly His Tyr Thr Ala Tyr Ala Lys Ala Arg Thr Ala				
	755		760	765
Asn Ser His Leu Ser Asn Leu Val Leu His Gly Asp Ile Pro Gln Asp				
	770		775	780
Phe Glu Met Glu Ser Lys Gly Gln Trp Phe His Ile Ser Asp Thr His				
	785		790	795
Val Gln Ala Val Pro Thr Thr Lys Val Leu Asn Ser Gln Ala Tyr Leu				
	805		810	815
Leu Phe Tyr Glu Arg Ile Leu				
	820			

<210> 402
 <211> 2903
 <212> DNA
 <213> Homo sapiens

<400> 402

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gtgccaacat	gggaaagaaa	cggacaaaag	gaaaaactgt	tccaatcgat	gattcctctg	180
aaacttttaga	acctgtgtgc	agacacatta	gaaaaggatt	ggaacaagg	aatttgaaaa	240
aggctttagt	gaatgtggaa	tggaatatct	gccaaagactg	taagactgac	aataaaagtga	300
aagataaagc	tgaagaagaa	acagaagaaa	agccttcagt	ttggctgtgt	cttaaattgtg	360
gccatcaggg	ctgtggcaga	aattctcagg	agcagcatgc	cttgaagcac	tatctgacgc	420
caagatctga	acctcactgt	ctggttctta	gtttggacaa	ctggagtgtg	tggtgttacg	480
tatgtgataa	tgagggtccag	tattgtagtt	caaaccagtt	gggtcaagtg	gttgattatg	540
tcagaaaaaca	agccagcatt	acaactccaa	agccagcaga	gaaagataat	ggaaatattg	600
aacttgaaaa	taaaaaatta	gaaaaagaga	gtaagaatga	acaagagaga	gaaaagaagg	660
aaaacatggc	taaagagaat	cctcccatga	attctccttg	ccaaataacc	gtgaaaggac	720
tcagttaattt	gggaaacaca	tgtttcttca	atgcagttat	gcagaacttg	tcacaaacac	780
cagtgccttag	agaactacta	aaagaagtga	aaatgtctgg	aacaattgtg	aaaattgaac	840
cacctgattt	ggcattaaca	gaaccattag	aaataaacct	tgagcctcca	ggcctcttta	900
ctttagccat	gagccagttt	cttaattgaga	tgcaagagac	caaaaagggg	gttgtgacac	960
cgaagaagact	cttttctcag	gtctgtaaaa	aagcagtgcg	gtttaaaggc	tatcagcagc	1020
aagacagcca	ggagctgctt	cgctacttat	tggtatggg	gagagcagaa	gaacacccaa	1080
gagtgtgata	aggaataact	aaagcatttg	gtaattctac	tgaagagttg	gatgaagaac	1140
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tctttggtgg	tgaactaact	agtatgatca	tgtgtgatca	atgcagaact	gtctccttgg	1260
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gtgtaaatga	taaaaactcg	aaaaagacag	tgaggatga	agatcaagat	agtgaggag	1380
aaaaagataa	cgacagttac	ataaaagaga	gaagtgtat	tccttctgga	acaagtaagc	1440
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aaaaaattca	agaaaagtt	cttcatttaa	atgatatttg	tactattgac	catcctgaag	1560
acagtgaata	tgaagctgaa	atgtcacttc	aaggagaagt	aaatatttaa	tccaaccata	1620
tttcacaaga	gggtgttatg	cataaagaat	attgtgtcaa	ccagaagaat	ttgaatggcc	1680
aagcaaaaa	gatcgaaagt	gtaactgaca	atcaaaaatc	cacagaggaa	gtagatatga	1740
aaaatatcaa	ctggataaat	gatctggagg	ttttaacatc	ttctcccatc	aggaatttaa	1800
atggtgccta	cctaaccgaa	gggagcaatg	gagaagtggg	catttccaat	ggtttcaaaa	1860
acctaatttt	gaatgctgct	cttcactcgt	atgaaataaa	tatagagatt	ctgaatgata	1920

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gtcatactcc tggaacaaag gtgtatgagg ttgtaaatga agatccagaa actgctttct 1980
gtactcttgc aaacagggaa gttttcaata ctgatgagtg ttcaatccaa cattgtttat 2040
atcagttcac ccgtaatcag aaacttcgag atgcgaataa actgctttgt gaagtatgca 2100
cacggagaca gtgtaatgga ccaaaaggcaa atataaaaagg tgaaagggaag catgtttaca 2160
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aaatcctaga tttggctcct ttttgacccc ttaaatgtaa gaagaaaata 2340
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ataaactgac ttaccctaaa atc 2903

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<210> 403
 <211> 205
 <212> PRT
 <213> Homo sapiens

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<400> 403
Met Ala Leu Gln Leu Ser Arg Glu Gln Gly Ile Thr Leu Arg Gly Ser
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Ala Glu Ile Val Ala Glu Phe Phe Ser Phe Gly Ile Asn Ser Ile Leu
 20          25          30
Tyr Gln Arg Gly Ile Tyr Pro Ser Glu Thr Phe Thr Arg Val Gln Lys
 35          40          45
Tyr Gly Leu Thr Leu Leu Val Thr Thr Asp Leu Glu Leu Ile Lys Tyr
 50          55          60
Leu Asn Asn Val Val Glu Gln Leu Lys Asp Trp Leu Tyr Lys Cys Ser
 65          70          75          80
Val Gln Lys Leu Val Val Val Ile Ser Asn Ile Glu Ser Gly Glu Val
 85          90          95
Leu Glu Arg Trp Gln Phe Asp Ile Glu Cys Asp Lys Thr Ala Lys Asp
100          105          110
Asp Ser Ala Pro Arg Glu Lys Ser Gln Lys Ala Ile Gln Asp Glu Ile
115          120          125
Arg Ser Val Ile Arg Gln Ile Thr Ala Thr Val Thr Phe Leu Pro Leu
130          135          140
Leu Glu Val Ser Cys Ser Phe Asp Leu Leu Ile Tyr Thr Asp Lys Asp
145          150          155          160
Leu Val Val Pro Glu Lys Trp Glu Glu Ser Gly Pro Gln Phe Ile Thr
165          170          175
Asn Ser Glu Glu Val Arg Leu Arg Ser Phe Thr Thr Thr Ile His Lys
180          185          190
Val Asn Ser Met Val Ala Tyr Lys Ile Pro Val Asn Asp
195          200          205

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<210> 404
 <211> 1390
 <212> DNA
 <213> Homo sapiens

<400> 404

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gcgccgaaat cgtggccgag ttcttctcat tcggcatcaa cagcatttta tatcagcgtg 180
gcataatatcc atctgaaacc ttactcgcag tgcagaaata cggactcacc ttgcttgtaa 240
ctactgatct tgaactcata aaatacctaa ataatgtggt ggaacaactg aaagattggt 300
tatacaagtg ttccagttcag aaactgggtg tagttatctc aaatattgaa agtgggtgagg 360
tcctggaaag atggcagttt gatattgagt gtgacaagac tgcaaaagat gacagtgcac 420
ccagagaaaa gtctcagaaa gctatccagg atgaaatccg ttcagtgatc agacagatca 480
cagctacggg gacatttctg ccactgttgg aagtttcttg ttcatttgat ctgctgattt 540
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ccaattctga ggaagtccgc ctctgttcat ttactactac aatccacaaa gtaaatagca 660
tggtggccta caaaattcct gtcaatgact gaggatgaca tgaggaaaat aatgtaattg 720
taattttgaa atgtggtttt cctgaaatca ggtcatctat agttgatag ttttatttca 780
ttgggttaatt ttacatgga gaaaaccaa atgatactta ctgaactgtg tgaattgtt 840
cctttatttt ttgtgtacct atttgactta ccatggagtt aacatcatga atttattgca 900
cattgttcaa aaggaaccag gaggtttttt tgtcaacatt gtgatgtata ttcctttgaa 960
gatagtaact gtagatggaa aaacttgtgc tataaagcta gatgctttcc taaatcagat 1020
gttttggtca agtagtttga ctacgtatag gtaggagat atttaagtat aaaatacaac 1080
aaaggaagtc taaatattca gaattcttgt taaggctcgt aaagtaactc ataacttata 1140
aacaatgaaa tattgtgtga tagctccttt tgaccttcat ttcagtata gttttcccta 1200
ttgaatcagt ttccaattat ttgactttaa tttatgtaac ttgaacctat gaagcaatgg 1260
atatttgtac tgtttaatgt tctgtgatac agaactctta aaaatgtttt ttcagtgtt 1320
ttataaaatc aagttttaag tgaaagtgag gaaataaagt taagtttgtt ttaaaaaaaa 1380
aaaaaaaaa                                     1390

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<210> 405

<211> 464

<212> PRT

<213> Homo sapiens

<400> 405

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Met Glu Thr Leu Ser Phe Pro Arg Tyr Asn Val Ala Glu Ile Val Ile
 1          5          10          15
His Ile Arg Asn Lys Ile Leu Thr Gly Ala Asp Gly Lys Asn Leu Thr
 20          25          30
Lys Asn Asp Leu Tyr Pro Asn Pro Lys Pro Glu Val Leu His Met Ile
 35          40          45
Tyr Met Arg Ala Leu Gln Ile Val Tyr Gly Ile Arg Leu Glu His Phe
 50          55          60
Tyr Met Met Pro Val Asn Ser Glu Val Met Tyr Pro His Leu Met Glu
 65          70          75          80
Gly Phe Leu Pro Phe Ser Asn Leu Val Thr His Leu Asp Ser Phe Leu
 85          90          95
Pro Ile Cys Arg Val Asn Asp Phe Glu Thr Ala Asp Ile Leu Cys Pro
100          105          110
Lys Ala Lys Arg Thr Ser Arg Phe Leu Ser Gly Ile Ile Asn Phe Ile
115          120          125
His Phe Arg Glu Ala Cys Arg Glu Thr Tyr Met Glu Phe Leu Trp Gln
130          135          140
Tyr Lys Ser Ser Ala Asp Lys Met Gln Gln Leu Asn Ala Ala His Gln
145          150          155          160
Glu Ala Leu Met Lys Leu Glu Arg Leu Asp Ser Val Pro Val Glu Glu
165          170          175
Gln Glu Glu Phe Lys Gln Leu Ser Asp Gly Ile Gln Glu Leu Gln Gln
180          185          190
Ser Leu Asn Gln Asp Phe His Gln Lys Thr Ile Val Leu Gln Glu Gly

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195	200	205
Asn Ser Gln Lys Lys Ser Asn Ile Ser Glu Lys Thr Lys Arg Leu Asn		
210	215	220
Glu Leu Lys Leu Leu Val Val Ser Leu Lys Glu Ile Gln Glu Ser Leu		
225	230	235
Lys Thr Lys Ile Val Asp Ser Pro Glu Lys Leu Lys Asn Tyr Lys Glu		
	245	250
Lys Met Lys Asp Thr Val Gln Lys Leu Lys Asn Ala Arg Gln Glu Val		
	260	265
Val Glu Lys Tyr Glu Ile Tyr Gly Asp Ser Val Asp Cys Leu Pro Ser		
	275	280
Cys Gln Leu Glu Val Gln Leu Tyr Gln Lys Lys Ile Gln Asp Leu Ser		
290	295	300
Asp Asn Arg Glu Lys Leu Ala Ser Ile Leu Lys Glu Ser Leu Asn Leu		
305	310	315
Glu Asp Gln Ile Glu Ser Asp Glu Ser Glu Leu Lys Lys Leu Lys Thr		
	325	330
Glu Glu Asn Ser Phe Lys Arg Leu Met Ile Val Lys Lys Glu Lys Leu		
	340	345
Ala Thr Ala Gln Phe Lys Ile Asn Lys Lys His Glu Asp Val Lys Gln		
	355	360
Tyr Lys Arg Thr Val Ile Glu Asp Cys Asn Lys Val Gln Glu Lys Arg		
	370	375
Gly Ala Val Tyr Glu Arg Val Thr Thr Ile Asn Gln Glu Ile Gln Lys		
385	390	395
Ile Lys Leu Gly Ile Gln Gln Leu Lys Asp Ala Ala Glu Arg Glu Lys		
	405	410
Leu Lys Ser Gln Glu Ile Phe Leu Asn Leu Lys Thr Ala Leu Glu Lys		
	420	425
Tyr His Asp Gly Ile Glu Lys Ala Ala Glu Asp Ser Tyr Ala Lys Ile		
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Asp Glu Lys Thr Ala Glu Leu Lys Arg Lys Met Phe Lys Met Ser Thr		
450	455	460

<210> 406
 <211> 1857
 <212> DNA
 <213> Homo sapiens

<400> 406
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 ccggcactgt agattaacag gaaacttcca agatggaaac ttgtgtcttc ccagatata 180
 atgtagctga gattgtgatt catattcgca ataagatcct aacaggagct gatggtaaaa 240
 acctcaccaa gaatgatctt tatccaaatc caaagcctga agtcttgcac atgactctaca 300
 tgagagcctt acaaatagta tatggaattc gactggaaca tttttacatg atgccagtga 360
 actctgaagt catgtatcca catttaattg aaggcttctt accattcagc aatttagtta 420
 ctcatctgga ctcatctttg cctatctgcc gggtgaaatga ctttgagact gctgatattc 480
 tatgtccaaa agcaaaacgg acaagtcggt tttaagtgg cattatcaac tttattcact 540
 tcagagaagc atgcgctgaa acgtatatgg aatttctttg gcaatataaa tctctctcgg 600
 acaaaatgca acagttaaac gccgcacacc aggaggcatt aatgaaactg gagagacttg 660
 attctgttcc agttgaagag caagaagagt tcaagcagct ttcagatggt attcaggagc 720
 tacaacaatc actaatcag gattttcatc aaaaaacgat agtgctgcaa gagggaaatt 780
 cccaaaagaa gtcaaatatt tcagagaaaa ccaagcgttt gaatgaacta aaattgttgg 840
 tggtttcttt gaaagaaata caagagagtt tgaaaacaaa aattgtggat tctccagaga 900
 agttaaagaa ttataaagaa aaaatgaaag atacggtcca gaagcttaaa aatgccagac 960


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aagaagtgggt ggagaaatat gaaatctatg gagactcagt tgactgcctg ctttcattgtc 1020
agttggaagt gcagttatat caaaagaaaa tacaggacct ttcagataat agggaaaaaat 1080
tagccagttat cttaaaggag agcctgaact tggaggacca aattgagagt gatgagtcag 1140
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gtgcagctat tcattgtctc actctgcccc ttgttgtaaa tagtttgagt aaacacaaac 1800
tagttacctt tgaaatatat atattttttt ctgttaaaaa aaaaaaaaaa aaaaaaa 1857

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<210> 407
<211> 1050
<212> PRT
<213> Homo sapiens

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<400> 407
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20 25 30
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35 40 45
Ser Ala Cys Asn Asn Thr Leu Gln Gln Gln Lys Arg Ala Phe Glu Tyr
50 55 60
Glu Ile Arg Phe Tyr Thr Gly Asn Asp Pro Leu Asp Val Trp Asp Arg
65 70 75 80
Tyr Ile Ser Trp Thr Glu Gln Asn Tyr Pro Gln Gly Gly Lys Glu Ser
85 90 95
Asn Met Ser Thr Leu Leu Glu Arg Ala Val Glu Ala Leu Gln Gly Glu
100 105 110
Lys Arg Tyr Tyr Ser Asp Pro Arg Phe Leu Asn Leu Trp Leu Lys Leu
115 120 125
Gly Arg Leu Cys Asn Glu Pro Leu Asp Met Tyr Ser Tyr Leu His Asn
130 135 140
Gln Gly Ile Gly Val Ser Leu Ala Gln Phe Tyr Ile Ser Trp Ala Glu
145 150 155 160
Glu Tyr Glu Ala Arg Glu Asn Phe Arg Lys Ala Asp Ala Ile Phe Gln
165 170 175
Glu Gly Ile Gln Gln Lys Ala Glu Pro Leu Glu Arg Leu Gln Ser Gln
180 185 190
His Arg Gln Phe Gln Ala Arg Val Ser Arg Gln Thr Leu Leu Ala Leu
195 200 205
Glu Lys Glu Glu Glu Glu Glu Val Phe Glu Ser Ser Val Pro Gln Arg
210 215 220
Ser Thr Leu Ala Glu Leu Lys Ser Lys Gly Lys Lys Thr Ala Arg Ala
225 230 235 240
Pro Ile Ile Arg Val Gly Gly Ala Leu Lys Ala Pro Ser Gln Asn Arg
245 250 255
Gly Leu Gln Asn Pro Phe Pro Gln Gln Met Gln Asn Asn Ser Arg Ile
260 265 270
Thr Val Phe Asp Glu Asn Ala Asp Glu Ala Ser Thr Ala Glu Leu Ser

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Leu Ser Ala Ser Ala Glu Leu Cys Ile Glu Asp Arg Pro Met Pro Lys
 740 745 750
 Leu Glu Ile Glu Lys Glu Ile Glu Leu Gly Asn Glu Asp Tyr Cys Ile
 755 760 765
 Lys Arg Glu Tyr Leu Ile Cys Glu Asp Tyr Lys Leu Phe Trp Val Ala
 770 775 780
 Pro Arg Asn Ser Ala Glu Leu Thr Val Ile Lys Val Ser Ser Gln Pro
 785 790 795 800
 Val Pro Trp Asp Phe Tyr Ile Asn Leu Lys Leu Lys Glu Arg Leu Asn
 805 810 815
 Glu Asp Phe Asp His Phe Cys Ser Cys Tyr Gln Tyr Gln Asp Gly Cys
 820 825 830
 Ile Val Trp His Gln Tyr Ile Asn Cys Phe Thr Leu Gln Asp Leu Leu
 835 840 845
 Gln His Ser Glu Tyr Ile Thr His Glu Ile Thr Val Leu Ile Ile Tyr
 850 855 860
 Asn Leu Leu Thr Ile Val Glu Met Leu His Lys Ala Glu Ile Val His
 865 870 875 880
 Gly Asp Leu Ser Pro Arg Cys Leu Ile Leu Arg Asn Arg Ile His Asp
 885 890 895
 Pro Tyr Asp Cys Asn Lys Asn Asn Gln Ala Leu Lys Ile Val Asp Phe
 900 905 910
 Ser Tyr Ser Val Asp Leu Arg Val Gln Leu Asp Val Phe Thr Leu Ser
 915 920 925
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<212> PRT

<213> Homo sapiens

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Asp Leu Tyr Ser Ala Tyr Asp Tyr Thr Ile Pro Pro Met Glu Lys Ala
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Val Val Lys Thr Asp Ile Gln Ile Ala Leu Pro Ser Gly Cys Tyr Gly
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Arg Val Ala Pro Arg Ser Gly Leu Ala Ala Lys His Phe Ile Asp Val
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Leu Phe Asn Phe Gly Lys Glu Lys Phe Glu Val Lys Lys Gly Asp Arg
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Ile Ala Gln Leu Ile Cys Glu Arg Ile Phe Tyr Pro Glu Ile Glu Glu
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<212> DNA

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Ile Arg Pro Pro Ala Glu Arg Ser Gly Ser Ala Asp Gly Glu Gln Asn
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Leu Cys Leu Ser Val Leu Ser Ser Thr Ser Leu Arg Leu His Ser Asn
 50          55          60
Pro Glu Pro Lys Thr Phe Thr Phe Asp His Val Ala Asp Val Asp Thr
 65          70          75          80
Thr Gln Glu Ser Val Phe Ala Thr Val Ala Lys Ser Ile Val Glu Ser
 85          90          95
Cys Met Ser Gly Tyr Asn Gly Thr Ile Phe Ala Tyr Gly Gln Thr Gly
100          105          110
Ser Gly Lys Thr Phe Thr Met Met Gly Pro Ser Glu Ser Asp Asn Phe
115          120          125
Ser His Asn Leu Arg Gly Val Ile Pro Arg Ser Phe Glu Tyr Leu Phe
130          135          140
Ser Leu Ile Asp Arg Glu Lys Glu Lys Ala Gly Ala Gly Lys Ser Phe
145          150          155          160
Leu Cys Lys Cys Ser Phe Ile Glu Ile Tyr Asn Glu Gln Ile Tyr Asp
165          170          175
Leu Leu Asp Ser Ala Ser Ala Gly Leu Tyr Leu Arg Glu His Ile Lys
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Lys Gly Val Phe Val Val Gly Ala Val Glu Gln Val Val Thr Ser Ala
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Ala Glu Ala Tyr Gln Val Leu Ser Gly Gly Trp Arg Asn Arg Arg Val
210          215          220
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Arg Thr Ser Leu Leu Asn Leu Val Asp Leu Ala Gly Ser Glu Arg Gln
260          265          270
Lys Asp Thr His Ala Glu Gly Met Arg Leu Lys Glu Ala Gly Asn Ile
275          280          285
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 <213> Homo sapiens

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 <212> PRT
 <213> Homo sapiens

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 Val Tyr Arg Ser Val Val Cys Pro Ile Leu Asp Glu Val Ile Met Gly
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 Phe Thr Met Glu Gly Glu Arg Ser Pro Asn Glu Glu Tyr Thr Trp Glu
 115 120 125
 Glu Asp Pro Leu Ala Gly Ile Ile Pro Arg Thr Leu His Gln Ile Phe
 130 135 140
 Glu Lys Leu Thr Asp Asn Gly Thr Glu Phe Ser Val Lys Val Ser Leu
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 Asp Val Ser Glu Arg Leu Gln Met Phe Asp Asp Pro Arg Asn Lys Arg
 180 185 190
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 Glu Val Tyr Gln Ile Leu Glu Lys Gly Ala Ala Lys Arg Thr Thr Ala
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 Ala Thr Leu Met Asn Ala Tyr Ser Ser Arg Ser His Ser Val Phe Ser
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 Val Thr Ile His Met Lys Glu Thr Thr Ile Asp Gly Glu Glu Leu Val
 245 250 255
 Lys Ile Gly Lys Leu Asn Leu Val Asp Leu Ala Gly Ser Glu Asn Ile
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 Gly Arg Ser Gly Ala Val Asp Lys Arg Ala Arg Glu Ala Gly Asn Ile
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 Asn Gln Ser Leu Leu Thr Leu Gly Arg Val Ile Thr Ala Leu Val Glu
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	530	535	540			
Met Glu Glu Leu Ile Lys Asp Gly Ser Ser Lys Gln Lys Ala Met Leu						
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Glu Val His Lys Thr Leu Phe Gly Asn Leu Ser Ser Ser Val Ser						
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Ala Leu Asp Thr Ile Thr Thr Val Ala Leu Gly Ser Leu Thr Ser Ile						
	580	585	590			
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	595	600	605			
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	660	665	670			
Lys Glu Leu Asp Gly Phe Leu Ser Ile Leu Cys Asn Asn Leu His Glu						
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Gly Asn Leu Thr Glu Asp Leu Lys Thr Ile Lys Gln Thr His Ser Gln						
	705	710	715			720
Glu Leu Cys Lys Leu Met Asn Leu Trp Thr Glu Arg Phe Cys Ala Leu						
	725	730	735			
Glu Glu Lys Cys Glu Asn Ile Gln Lys Pro Leu Ser Ser Val Gln Glu						
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	885	890	895			
Glu Leu Asn Glu Thr Ile Lys Ile Gly Leu Thr Lys Leu Asn Cys Phe						
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 995 1000 1005
 Val Pro Phe Phe Gln His Lys Lys Ser His Gly Lys Asp Lys Glu Asn
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 <212> DNA
 <213> Homo sapiens

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<210> 415
 <211> 398
 <212> PRT
 <213> Homo sapiens

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35	40	45	
Val Ala Lys Lys Ala Gln Asn Thr Lys Val Pro Val Gln Pro Thr Lys			
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Thr Thr Asn Val Asn Lys Gln Leu Lys Pro Thr Ala Ser Val Lys Pro			
65	70	75	80
Val Gln Met Glu Lys Leu Ala Pro Lys Gly Pro Ser Pro Thr Pro Glu			
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Asp Val Ser Met Lys Glu Glu Asn Leu Cys Gln Ala Phe Ser Asp Ala			
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Leu Leu Cys Lys Ile Glu Asp Ile Asp Asn Glu Asp Trp Glu Asn Pro			
115	120	125	
Gln Leu Cys Ser Asp Tyr Val Lys Asp Ile Tyr Gln Tyr Leu Arg Gln			
130	135	140	
Leu Glu Val Leu Gln Ser Ile Asn Pro His Phe Leu Asp Gly Arg Asp			
145	150	155	160
Ile Asn Gly Arg Met Arg Ala Ile Leu Val Asp Trp Leu Val Gln Val			
165	170	175	
His Ser Lys Phe Arg Leu Leu Gln Glu Thr Leu Tyr Met Cys Val Gly			
180	185	190	
Ile Met Asp Arg Phe Leu Gln Val Gln Pro Val Ser Arg Lys Lys Leu			
195	200	205	
Gln Leu Val Gly Ile Thr Ala Leu Leu Leu Ala Ser Lys Tyr Glu Glu			
210	215	220	
Met Phe Ser Pro Asn Ile Glu Asp Phe Val Tyr Ile Thr Asp Asn Ala			
225	230	235	240
Tyr Thr Ser Ser Gln Ile Arg Glu Met Glu Thr Leu Ile Leu Lys Glu			
245	250	255	
Leu Lys Phe Glu Leu Gly Arg Pro Leu Pro Leu His Phe Leu Arg Arg			
260	265	270	
Ala Ser Lys Ala Gly Glu Val Asp Val Glu Gln His Thr Leu Ala Lys			
275	280	285	
Tyr Leu Met Glu Leu Thr Leu Ile Asp Tyr Asp Met Val His Tyr His			
290	295	300	
Pro Ser Lys Val Ala Ala Ala Ala Ser Cys Leu Ser Gln Lys Val Leu			
305	310	315	320
Gly Gln Gly Lys Trp Asn Leu Lys Gln Gln Tyr Tyr Thr Gly Tyr Thr			
325	330	335	
Glu Asn Glu Val Leu Glu Val Met Gln His Met Ala Lys Asn Val Val			
340	345	350	
Lys Val Asn Glu Asn Leu Thr Lys Phe Ile Ala Ile Lys Asn Lys Tyr			
355	360	365	
Ala Ser Ser Lys Leu Leu Lys Ile Ser Met Ile Pro Gln Leu Asn Ser			
370	375	380	
Lys Ala Val Lys Asp Leu Ala Ser Pro Leu Ile Gly Arg Ser			
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<210> 416
 <211> 1530
 <212> DNA
 <213> Homo sapiens

<400> 416

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<210> 417
 <211> 543
 <212> PRT
 <213> Homo sapiens

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<400> 417
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20          25          30
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35          40          45
Ser Ser Gln Ser Ser His Ser Ser Ser Gly Thr Leu Ser Ser Leu Glu
50          55          60
Thr Val Ser Thr Gln Glu Leu Tyr Ser Ile Pro Glu Asp Gln Glu Pro
65          70          75          80
Glu Asp Gln Glu Pro Glu Glu Pro Thr Pro Ala Pro Trp Ala Arg Leu
85          90          95
Trp Ala Leu Gln Asp Gly Phe Ala Asn Leu Glu Cys Val Asn Asp Asn
100         105         110
Tyr Trp Phe Gly Arg Asp Lys Ser Cys Glu Tyr Cys Phe Asp Glu Pro
115         120         125
Leu Leu Lys Arg Thr Asp Lys Tyr Arg Thr Tyr Ser Lys Lys His Phe
130         135         140
Arg Ile Phe Arg Glu Val Gly Pro Lys Asn Ser Tyr Ile Ala Tyr Ile
145         150         155         160
Glu Asp His Ser Gly Asn Gly Thr Phe Val Asn Thr Glu Leu Val Gly
165         170         175
Lys Gly Lys Arg Arg Pro Leu Asn Asn Asn Ser Glu Ile Ala Leu Ser
180         185         190

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Leu Ser Arg Asn Lys Val Phe Val Phe Phe Asp Leu Thr Val Asp Asp
 195 200 205
 Gln Ser Val Tyr Pro Lys Ala Leu Arg Asp Glu Tyr Ile Met Ser Lys
 210 215 220
 Thr Leu Gly Ser Gly Ala Cys Gly Glu Val Lys Leu Ala Phe Glu Arg
 225 230 235 240
 Lys Thr Cys Lys Lys Val Ala Ile Lys Ile Ile Ser Lys Arg Lys Phe
 245 250 255
 Ala Ile Gly Ser Ala Arg Glu Ala Asp Pro Ala Leu Asn Val Glu Thr
 260 265 270
 Glu Ile Glu Ile Leu Lys Lys Leu Asn His Pro Cys Ile Ile Lys Ile
 275 280 285
 Lys Asn Phe Phe Asp Ala Glu Asp Tyr Tyr Ile Val Leu Glu Leu Met
 290 295 300
 Glu Gly Gly Glu Leu Phe Asp Lys Val Val Gly Asn Lys Arg Leu Lys
 305 310 315 320
 Glu Ala Thr Cys Lys Leu Tyr Phe Tyr Gln Met Leu Leu Ala Val Gln
 325 330 335
 Tyr Leu His Glu Asn Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
 340 345 350
 Val Leu Leu Ser Ser Gln Glu Glu Asp Cys Leu Ile Lys Ile Thr Asp
 355 360 365
 Phe Gly His Ser Lys Ile Leu Gly Glu Thr Ser Leu Met Arg Thr Leu
 370 375 380
 Cys Gly Thr Pro Thr Tyr Leu Ala Pro Glu Val Leu Val Ser Val Gly
 385 390 395 400
 Thr Ala Gly Tyr Asn Arg Ala Val Asp Cys Trp Ser Leu Gly Val Ile
 405 410 415
 Leu Phe Ile Cys Leu Ser Gly Tyr Pro Pro Phe Ser Glu His Arg Thr
 420 425 430
 Gln Val Ser Leu Lys Asp Gln Ile Thr Ser Gly Lys Tyr Asn Phe Ile
 435 440 445
 Pro Glu Val Trp Ala Glu Val Ser Glu Lys Ala Leu Asp Leu Val Lys
 450 455 460
 Lys Leu Leu Val Val Asp Pro Lys Ala Arg Phe Thr Thr Glu Glu Ala
 465 470 475 480
 Leu Arg His Pro Trp Leu Gln Asp Glu Asp Met Lys Arg Lys Phe Gln
 485 490 495
 Asp Leu Leu Ser Glu Glu Asn Glu Ser Thr Ala Leu Pro Gln Val Leu
 500 505 510
 Ala Gln Pro Ser Thr Ser Arg Lys Arg Pro Arg Glu Gly Glu Ala Glu
 515 520 525
 Gly Ala Glu Thr Thr Lys Arg Pro Ala Val Cys Ala Ala Val Leu
 530 535 540

<210> 418
 <211> 2547
 <212> DNA
 <213> Homo sapiens

<400> 418
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 ggggtggacaa gacgctgcag ttgctggtac ctgtgctgga gcttcgctgt atcaactctg 180
 aaggaacggt tgcagtcctat aaggtcgaag tagtctcgag tggggctcagg tgccctgcagc 240
 gctcggcact gtgggcagaa gaactgtcc tcccgcgcgg ggcgccatgg gccgcgcag 300

ttccaacagc ggggataatt gcttcccgc tgcgacgcag catcgagct tagcgggtctc 360
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 cgccacatct ggcggggcgc ctatctagcc gtgggtcactc gtggggaaaa gcaaagagag 480
 cgttaacca gactaatgtt gctgattggc tggggagtcg agggggcggg atcacccgag 540
 gggaaaccgg gttctaagtt ccgctctccc ttctaaacta caactcccag gaggcattga 600
 ggcgggcgct gacggccaca tctgtgtctc ctcatgggtc cgcgggcagg ggaggggggtt 660
 ttgattggct gaggggtggag tttgtatctg cagggttagc gccactctgc tggctgaggc 720
 tgcggagagt gtgcggctcc aggtgggtct acgcggtcgt gatgtctcgg gactcggatg 780
 ttgaggctca gcagtcctcat ggcagcagtg cctgttcaca gccccatggc agcgttacc 840
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 caaactccag ccagtcctct cactccagct ctgggacact gagctcctta gagacagtgt 960
 ccactcagga actctattct attcttgagg accaagaacc tgaggaccaa gaacctgagg 1020
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 aatgtgtgaa tgacaactac tgggttggga gggacaaaag ctgtgaatat tgccttgatg 1140
 aaccactgct gaaaagaaca gataaatacc gaacatacag caagaacacac tttcggattt 1200
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 ctctacccca ggttctagcc cagccttcta ctagtgcgaa gcggccccgt gaaggggaag 2340
 ccgaggggtg cgagaccaca aagcgcccg ctgtgtgtgc tgtgtgtgtg tgaactccgt 2400
 ggtttgaaca cgaaagaaat gtaccttctt tcaactctgc atctttctt tctttgagtc 2460
 tgtttttta tagtttgtat ttaattatg ggaataattg ctttttcaca gtcactgatg 2520
 tataattaaa aacctgatgg aacctgg 2547

<210> 419
 <211> 297
 <212> PRT
 <213> Homo sapiens

<400> 419
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 Val Val Tyr Lys Gly Arg His Lys Thr Thr Gly Gln Val Val Ala Met
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 Lys Lys Ile Arg Leu Glu Ser Glu Glu Gly Val Pro Ser Thr Ala
 35 40 45
 Ile Arg Glu Ile Ser Leu Leu Lys Glu Leu Arg His Pro Asn Ile Val
 50 55 60
 Ser Leu Gln Asp Val Leu Met Gln Asp Ser Arg Leu Tyr Leu Ile Phe
 65 70 75 80
 Glu Phe Leu Ser Met Asp Leu Lys Lys Tyr Leu Asp Ser Ile Pro Pro
 85 90 95

Gly Gln Tyr Met Asp Ser Ser Leu Val Lys Ser Tyr Leu Tyr Gln Ile
 100 105 110
 Leu Gln Gly Ile Val Phe Cys His Ser Arg Arg Val Leu His Arg Asp
 115 120 125
 Leu Lys Pro Gln Asn Leu Leu Ile Asp Asp Lys Gly Thr Ile Lys Leu
 130 135 140
 Ala Asp Phe Gly Leu Ala Arg Ala Phe Gly Ile Pro Ile Arg Val Tyr
 145 150 155 160
 Thr His Glu Val Val Thr Leu Trp Tyr Arg Ser Pro Glu Val Leu Leu
 165 170 175
 Gly Ser Ala Arg Tyr Ser Thr Pro Val Asp Ile Trp Ser Ile Gly Thr
 180 185 190
 Ile Phe Ala Glu Leu Ala Thr Lys Lys Pro Leu Phe His Gly Asp Ser
 195 200 205
 Glu Ile Asp Gln Leu Phe Arg Ile Phe Arg Ala Leu Gly Thr Pro Asn
 210 215 220
 Asn Glu Val Trp Pro Glu Val Glu Ser Leu Gln Asp Tyr Lys Asn Thr
 225 230 235 240
 Phe Pro Lys Trp Lys Pro Gly Ser Leu Ala Ser His Val Lys Asn Leu
 245 250 255
 Asp Glu Asn Gly Leu Asp Leu Leu Ser Lys Met Leu Ile Tyr Asp Pro
 260 265 270
 Ala Lys Arg Ile Ser Gly Lys Met Ala Leu Asn His Pro Tyr Phe Asn
 275 280 285
 Asp Leu Asp Asn Gln Ile Lys Lys Met
 290 295

<210> 420
 <211> 1235
 <212> DNA
 <213> Homo sapiens

<400> 420
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 tgactaacta tggaagatta taccaaaata gagaaaattg gagaaggtag ctatggagtt 180
 gtgtataagg gtagacacaa aactacaggt caagtggtag ccatgaaaaa aatcagacta 240
 gaaagtgaag aggaaggggg tcttagtact gcaattcggg aaatttctct attaaaggaa 300
 cttcgtcatc caaatatagt cagtcttcag gatgtgctta tgcaggattc caggttatat 360
 ctcatctttg agtttcttct catggatctg aagaaatact tggattctat cctccttgg 420
 cagtacatgg attcttctact tgttaagagt tatattatac aaatcctaca ggggattgtg 480
 ttttgtcact ctagaagagt tcttcacaga gacttaaaac ctcaaatctc ctgattgat 540
 gacaaaggaa caattaaact ggctgatttt ggccttgcca gagcttttgg aatacctatc 600
 agagtataca cactgaggt agtaacactc tggtagagat ctccagaagt attgctgggg 660
 tcagctcggt actcaactcc agttgacatt tggagtatag gcaccatatt tgcgaacta 720
 gcaactaaga aaccactttt ccatggggat tcagaaattg atcaactctt caggattttc 780
 agagcttttg gcactcccaa taatgaagtg tggccagaag tggaaatctt acaggactat 840
 aagaatacat ttcccaaagt gaaaccagga agcctagcat cccatgtcaa aaacttggat 900
 gaaaatggct tggatttgcct ctgaaaaatg ttaatctatg atccagccaa acgaatttct 960
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 tagctttctg acaaaaagtt tccatattgt atgtcaacag atagttgtgt ttttatgtt 1080
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 gtcttctaat ttcaaaaata taacttaaaa atgtaaatat tctatatgaa tttaaatata 1200
 attctgtaaa tgtgaaaaaa aaaaaaaaaa aaaaa 1235

<210> 421

<211> 240
 <212> PRT
 <213> Homo sapiens

<400> 421

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Val Val Tyr Lys Gly Arg His Lys Thr Thr Gly Gln Val Val Ala Met
          20          25          30
Lys Lys Ile Arg Leu Glu Ser Glu Glu Gly Val Pro Ser Thr Ala
          35          40          45
Ile Arg Glu Ile Ser Leu Leu Lys Glu Leu Arg His Pro Asn Ile Val
          50          55          60
Ser Leu Gln Asp Val Leu Met Gln Asp Ser Arg Leu Tyr Leu Ile Phe
65          70          75          80
Glu Phe Leu Ser Met Asp Leu Lys Lys Tyr Leu Asp Ser Ile Pro Pro
          85          90          95
Gly Gln Tyr Met Asp Ser Ser Leu Val Lys Val Val Thr Leu Trp Tyr
          100         105         110
Arg Ser Pro Glu Val Leu Leu Gly Ser Ala Arg Tyr Ser Thr Pro Val
          115         120         125
Asp Ile Trp Ser Ile Gly Thr Ile Phe Ala Glu Leu Ala Thr Lys Lys
130         135         140
Pro Leu Phe His Gly Asp Ser Glu Ile Asp Gln Leu Phe Arg Ile Phe
145         150         155         160
Arg Ala Leu Gly Thr Pro Asn Asn Glu Val Trp Pro Glu Val Glu Ser
          165         170         175
Leu Gln Asp Tyr Lys Asn Thr Phe Pro Lys Trp Lys Pro Gly Ser Leu
          180         185         190
Ala Ser His Val Lys Asn Leu Asp Glu Asn Gly Leu Asp Leu Leu Ser
          195         200         205
Lys Met Leu Ile Tyr Asp Pro Ala Lys Arg Ile Ser Gly Lys Met Ala
210         215         220
Leu Asn His Pro Tyr Phe Asn Asp Leu Asp Asn Gln Ile Lys Lys Met
225         230         235         240

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<210> 422
 <211> 948
 <212> DNA
 <213> Homo sapiens

<400> 422

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actagaaagt gaaggaggaag ggggttcctag tactgcaatt cgggaaattt ctctattaaa 180
ggaacttcgt catccaaata tagtcagttc tcaggatgtg cttatgcagg attccagggt 240
atatctcatc tttgagtttc tttccatgga tctgaagaaa tacttggatt ctatccctcc 300
tggtcagtac atggattctt cacttgtaa ggtagtaaca ctctgtaca gatctccaga 360
agtattgctg gggtcagctc gttactcaac tcagttgac atttggagta taggcaccat 420
atttgcrgaa ctacgaacta agaaaccact tttccatggg gattcagaaa ttgatcaact 480
cttcaggatt ttcagagctt tgggcactcc caataatgaa gtgtggccag aagtggaaatc 540
tttacaggac tataagaata catttcccaa atggaacca ggaagcctag catcccatgt 600
caaaaacttg gatgaaaatg gcttggattt gctctcgaaa atgttaatct atgatccagc 660
caaacgaatt tctggcaaaa tggcactgaa tcatccatat tttaatgatt tggacaatca 720
gattaagaag atgtagcttt ctgacaaaaa gtttccatat gttatgtcaa cagatagttg 780
tgtttttatt gttaactctt gtctattttt gtcttatata tatttctttg ttatcaaact 840

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tcagctgtac ttcgtcttct aatttcaaaa atataactta aaaatgtaaa tattctatat 900
gaatttaaat ataattctgt aaatgtgaaa aaaaaaaaaa aaaaaaaa 948

<210> 423
<211> 433
<212> PRT
<213> Homo sapiens

<400> 423
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Ala Lys Ile Asn Met Ala Gly Ala Lys Arg Val Pro Thr Ala Pro Ala
20 25 30
Ala Thr Ser Lys Pro Gly Leu Arg Pro Arg Thr Ala Leu Gly Asp Ile
35 40 45
Gly Asn Lys Val Ser Glu Gln Leu Gln Ala Lys Met Pro Met Lys Lys
50 55 60
Glu Ala Lys Pro Ser Ala Thr Gly Lys Val Ile Asp Lys Lys Leu Pro
65 70 75 80
Lys Pro Leu Glu Lys Val Pro Met Leu Val Pro Val Pro Val Ser Glu
85 90 95
Pro Val Pro Glu Pro Glu Pro Glu Pro Glu Pro Glu Pro Val Lys Glu
100 105 110
Glu Lys Leu Ser Pro Glu Pro Ile Leu Val Asp Thr Ala Ser Pro Ser
115 120 125
Pro Met Glu Thr Ser Gly Cys Ala Pro Ala Glu Glu Asp Leu Cys Gln
130 135 140
Ala Phe Ser Asp Val Ile Leu Ala Val Asn Asp Val Asp Ala Glu Asp
145 150 155 160
Gly Ala Asp Pro Asn Leu Cys Ser Glu Tyr Val Lys Asp Ile Tyr Ala
165 170 175
Tyr Leu Arg Gln Leu Glu Glu Glu Gln Ala Val Arg Pro Lys Tyr Leu
180 185 190
Leu Gly Arg Glu Val Thr Gly Asn Met Arg Ala Ile Leu Ile Asp Trp
195 200 205
Leu Val Gln Val Gln Met Lys Phe Arg Leu Leu Gln Glu Thr Met Tyr
210 215 220
Met Thr Val Ser Ile Ile Asp Arg Phe Met Gln Asn Asn Cys Val Pro
225 230 235 240
Lys Lys Met Leu Gln Leu Val Gly Val Thr Ala Met Phe Ile Ala Ser
245 250 255
Lys Tyr Glu Glu Met Tyr Pro Pro Glu Ile Gly Asp Phe Ala Phe Val
260 265 270
Thr Asp Asn Thr Tyr Thr Lys His Gln Ile Arg Gln Met Glu Met Lys
275 280 285
Ile Leu Arg Ala Leu Asn Phe Gly Leu Gly Arg Pro Leu Pro Leu His
290 295 300
Phe Leu Arg Arg Ala Ser Lys Ile Gly Glu Val Asp Val Glu Gln His
305 310 315 320
Thr Leu Ala Lys Tyr Leu Met Glu Leu Thr Met Leu Asp Tyr Asp Met
325 330 335
Val His Phe Pro Pro Ser Gln Ile Ala Ala Gly Ala Phe Cys Leu Ala
340 345 350
Leu Lys Ile Leu Asp Asn Gly Glu Trp Thr Pro Thr Leu Gln His Tyr
355 360 365
Leu Ser Tyr Thr Glu Glu Ser Leu Leu Pro Val Met Gln His Leu Ala
370 375 380

Lys Asn Val Val Met Val Asn Gln Gly Leu Thr Lys His Met Thr Val
 385 390 395 400
 Lys Asn Lys Tyr Ala Thr Ser Lys His Ala Lys Ile Ser Thr Leu Pro
 405 410 415
 Gln Leu Asn Ser Ala Leu Val Gln Asp Leu Ala Lys Ala Val Ala Lys
 420 425 430
 Val

<210> 424
 <211> 2101
 <212> DNA
 <213> Homo sapiens

<400> 424
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 cgggcctccg gtgttctgct tctccccgct gagctgctgc ctgggtgaaga ggaagccatg 180
 gcgctccgag tcaccaggaa ctgaaaatt aatgctgaaa ataaggcgaa gatcaacatg 240
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 a 2101

<210> 425
 <211> 665
 <212> PRT
 <213> Homo sapiens

<400> 425

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			20					25					30		
Ile	Gly	Ala	Thr	Arg	Arg	Pro	Pro	Pro	Ala	Arg	Val	Arg	Val	Ala	Val
			35				40					45			
Arg	Leu	Arg	Pro	Phe	Val	Asp	Gly	Thr	Ala	Gly	Ala	Ser	Asp	Pro	Pro
	50					55					60				
Cys	Val	Arg	Gly	Met	Asp	Ser	Cys	Ser	Leu	Glu	Ile	Ala	Asn	Trp	Arg
65					70					75				80	
Asn	His	Gln	Glu	Thr	Leu	Lys	Tyr	Gln	Phe	Asp	Ala	Phe	Tyr	Gly	Glu
				85					90					95	
Arg	Ser	Thr	Gln	Gln	Asp	Ile	Tyr	Ala	Gly	Ser	Val	Gln	Pro	Ile	Leu
			100					105					110		
Arg	His	Leu	Leu	Glu	Gly	Gln	Asn	Ala	Ser	Val	Leu	Ala	Tyr	Gly	Pro
			115				120					125			
Thr	Gly	Ala	Gly	Lys	Thr	His	Thr	Met	Leu	Gly	Ser	Pro	Glu	Gln	Pro
	130					135					140				
Gly	Val	Ile	Pro	Arg	Ala	Leu	Met	Asp	Leu	Leu	Gln	Leu	Thr	Arg	Glu
145					150					155				160	
Glu	Gly	Ala	Glu	Gly	Arg	Pro	Trp	Ala	Leu	Ser	Val	Thr	Met	Ser	Tyr
			165					170					175		
Leu	Glu	Ile	Tyr	Gln	Glu	Lys	Val	Leu	Asp	Leu	Leu	Asp	Pro	Ala	Ser
			180					185					190		
Gly	Asp	Leu	Val	Ile	Arg	Glu	Asp	Cys	Arg	Gly	Asn	Ile	Leu	Ile	Pro
			195				200					205			
Gly	Leu	Ser	Gln	Lys	Pro	Ile	Ser	Ser	Phe	Ala	Asp	Phe	Glu	Arg	His
	210					215					220				
Phe	Leu	Pro	Ala	Ser	Arg	Asn	Arg	Thr	Val	Gly	Ala	Thr	Arg	Leu	Asn
225					230					235				240	
Gln	Arg	Ser	Ser	Arg	Ser	His	Ala	Val	Leu	Val	Lys	Val	Asp	Gln	
			245					250					255		
Arg	Glu	Arg	Leu	Ala	Pro	Phe	Arg	Gln	Arg	Glu	Gly	Lys	Leu	Tyr	Leu
			260					265					270		
Ile	Asp	Leu	Ala	Gly	Ser	Glu	Asp	Asn	Arg	Arg	Thr	Gly	Asn	Lys	Gly
			275				280					285			
Leu	Arg	Leu	Lys	Glu	Ser	Gly	Ala	Ile	Asn	Thr	Ser	Leu	Phe	Val	Leu
	290					295					300				
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305					310					315				320	
Arg	Asp	Ser	Lys	Leu	Thr	Arg	Leu	Leu	Gln	Asp	Ser	Leu	Gly	Gly	Ser
			325					330					335		
Ala	His	Ser	Ile	Leu	Ile	Ala	Asn	Ile	Ala	Pro	Glu	Arg	Arg	Phe	Tyr
			340					345					350		
Leu	Asp	Thr	Val	Ser	Ala	Leu	Asn	Phe	Ala	Ala	Arg	Ser	Lys	Glu	Val
			355				360					365			
Ile	Asn	Arg	Pro	Phe	Thr	Asn	Glu	Ser	Leu	Gln	Pro	His	Ala	Leu	Gly
	370					375					380				
Pro	Val	Lys	Leu	Ser	Gln	Lys	Glu	Leu	Leu	Gly	Pro	Pro	Glu	Ala	Lys
385					390					395				400	
Arg	Ala	Arg	Gly	Pro	Glu	Glu	Glu	Glu	Ile	Gly	Ser	Pro	Glu	Pro	Met
			405						410					415	
Ala	Ala	Pro	Ala	Ser	Ala	Ser	Gln	Lys	Leu	Ser	Pro	Leu	Gln	Lys	Leu
			420					425					430		
Ser	Ser	Met	Asp	Pro	Ala	Met	Leu	Glu	Arg	Leu	Leu	Ser	Leu	Asp	Arg

435		440		445
Leu Leu Ala Ser Gln Gly Ser Gln Gly Ala Pro Leu Leu Ser Thr Pro				
450		455		460
Lys Arg Glu Arg Met Val Leu Met Lys Thr Val Glu Glu Lys Asp Leu				
465		470		475
Glu Ile Glu Arg Leu Lys Thr Lys Gln Lys Glu Leu Glu Ala Lys Met				
	485		490	495
Leu Ala Gln Lys Ala Glu Glu Lys Glu Asn His Cys Pro Thr Met Leu				
	500		505	510
Arg Pro Leu Ser His Arg Thr Val Thr Gly Ala Lys Pro Leu Lys Lys				
	515		520	525
Ala Val Val Met Pro Leu Gln Leu Ile Gln Glu Gln Ala Ala Ser Pro				
	530		535	540
Asn Ala Glu Ile His Ile Leu Lys Asn Lys Gly Arg Lys Arg Lys Leu				
545		550		555
Glu Ser Leu Asp Ala Leu Glu Pro Glu Glu Lys Ala Glu Asp Cys Trp				
	565		570	575
Glu Leu Gln Ile Ser Pro Glu Leu Leu Ala His Gly Arg Gln Lys Ile				
	580		585	590
Leu Asp Leu Leu Asn Glu Gly Ser Ala Arg Asp Leu Arg Ser Leu Gln				
	595		600	605
Arg Ile Gly Pro Lys Lys Ala Gln Leu Ile Val Gly Trp Arg Glu Leu				
	610		615	620
His Gly Pro Phe Ser Gln Val Glu Asp Leu Glu Arg Val Glu Gly Ile				
625		630		635
Thr Gly Lys Gln Met Glu Ser Phe Leu Lys Ala Asn Ile Leu Gly Leu				
	645		650	655
Ala Ala Gly Gln Arg Cys Gly Ala Ser				
	660		665	

<210> 426
 <211> 2097
 <212> DNA
 <213> Homo sapiens

<400> 426
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 attggagcta ctgcgtctcc acctccagct cgcgtaaggg tggctgtgcg actgcggcca 180
 ttgttgatg gaacagcggg agcaagtgat cccccctgtg tgcggggcat ggacagctgc 240
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 ttctatgggg agaggagtac tcagcaggac atctatgcag gttcagtgcg gccatccta 360
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 aagacgcaca caatgctggg cagcccagag caacctgggg tgatcccgcg ggctctcatg 480
 gacctctctg agctcacaa ggaggagggt gccgagggcc ggccatgggc cctttctgtc 540
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 gaggccaaga tggtggccca gaaggctgag gaaaaggaga accattgtcc cacaatgctc 1560
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 aagaaggccc agctaatacgt gggctggcgg gagctccacg gcccttcag ccagggtggag 1920
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<210> 427
 <211> 209
 <212> PRT
 <213> Homo sapiens

<400> 427
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 Lys Asn Ser Ser Val Pro Arg Arg Thr Leu Lys Met Ile Gln Pro Ser
 20 25 30
 Ala Ser Gly Ser Leu Val Gly Arg Glu Asn Glu Leu Ser Ala Gly Leu
 35 40 45
 Ser Lys Arg Lys His Arg Asn Asp His Leu Thr Ser Thr Thr Ser Ser
 50 55 60
 Pro Gly Val Ile Val Pro Glu Ser Ser Glu Asn Lys Asn Leu Gly Gly
 65 70 75 80
 Val Thr Gln Glu Ser Phe Asp Leu Met Ile Lys Glu Asn Pro Ser Ser
 85 90 95
 Gln Tyr Trp Lys Glu Val Ala Glu Lys Arg Arg Lys Ala Leu Tyr Glu
 100 105 110
 Ala Leu Lys Glu Asn Glu Lys Leu His Lys Glu Ile Glu Gln Lys Asp
 115 120 125
 Asn Glu Ile Ala Arg Leu Lys Lys Glu Asn Lys Glu Leu Ala Glu Val
 130 135 140
 Ala Glu His Val Gln Tyr Met Ala Glu Leu Ile Glu Arg Leu Asn Gly
 145 150 155 160
 Glu Pro Leu Asp Asn Phe Glu Ser Leu Asp Asn Gln Glu Phe Asp Ser
 165 170 175
 Glu Glu Glu Thr Val Glu Asp Ser Leu Val Glu Asp Ser Glu Ile Gly
 180 185 190
 Thr Cys Ala Glu Gly Thr Val Ser Ser Ser Thr Asp Ala Lys Pro Cys
 195 200 205
 Ile

<210> 428
 <211> 1224
 <212> DNA
 <213> Homo sapiens

<400> 428
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 acgtgcgttc gctacgagga ttgagcgtct ccaccagta agtgggcaag aggcggcagg 180
 aagtgggtac gcagggggcg aaggcgcaaca gcctctagac gactcgcttt ccctccggcc 240
 aacctctgaa gccgcgtcct actttgacag ctgcagggcc gcggcctgggt cttctgtgct 300
 tcaccatcta cataatgaat ccagtatga agcagaaaca agaagaatc aaagagaata 360
 taaagaatag ttctgtccca agaagaactc tgaagatgat tcagccttct gcactctggat 420
 ctcttggttg aagagaaaat gagctgtccg caggcttgct caaaaggaaa catcggaatg 480
 accacttaac atctacaact tccagccctg ggggtattgt ccagaatct agtgaaaaata 540
 aaaatcttgg aggagtcacc caggagtcatt ttgatcttat gattaaagaa aatccatcct 600
 ctgagtattg gaaggaaagt gcagaaaaac ggagaaaggc gctgtatgaa gcacttaagg 660
 aaaaatgagaa acttcataaa gaaattgaac aaaaggacaa tgaaattgct cgccgaaaa 720
 aggagaataa agaactggca gaagtagcag aacatgtaca gtatatggca gagctaatag 780
 agagactgaa tgggtgaacct ctggataatt ttgaatcact ggataatcag gaatttgatt 840
 ctgaagaaga aactgttgag gattctctag tggaagactc agaaattggc acgtgtgctg 900
 aaggaaactgt atcttcctct acggatgcaa agccatgtat atgaaatgca ttaatatattg 960
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 actacataat gccaaactctg gaatcaaatt tccttgtttg aatcctggga ccctattgca 1080
 ttaaagtaca aatacatgt atttttaac tatgatgggt tatgtgaata ggattttctc 1140
 agttgtcagc catgacttat gtttattact aaataaactt caaactcctg tggaaaaaaa 1200
 aaaaaaaaaa aaaaaaaaaa aaaa 1224

<210> 429
 <211> 79
 <212> PRT
 <213> Homo sapiens

<400> 429
 Met Ala His Lys Gln Ile Tyr Tyr Ser Asp Lys Tyr Phe Asp Glu His
 1 5 10 15
 Tyr Glu Tyr Arg His Val Met Leu Pro Arg Glu Leu Ser Lys Gln Val
 20 25 30
 Pro Lys Thr His Leu Met Ser Glu Glu Glu Trp Arg Arg Leu Gly Val
 35 40 45
 Gln Gln Ser Leu Gly Trp Val His Tyr Met Ile His Glu Pro Glu Pro
 50 55 60
 His Ile Leu Leu Phe Arg Arg Pro Leu Pro Lys Asp Gln Gln Lys
 65 70 75

<210> 430
 <211> 627
 <212> DNA
 <213> Homo sapiens

<400> 430
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 cggacaagta cttcgacgaa cactacgagt accggcatgt tatgttacc agagaacttt 180
 ccaaacagct acctaaaact catctgatgt ctgaagagga gtggaggaga cttggtgtcc 240
 aacagagtct aggtcgggtt cattacatga ttcatgagcc agaaccacat attcttctct 300
 ttgacgagcc tcttccaaaa gatcaacaaa aatgaagttt atctggggat cgtcaaatct 360
 ttttcaaat taatgtatat gtgtatataa ggtagtattc agtgaatact tgagaaatgt 420
 acaaatcttt catccatacc tgtgcatgag ctgtattctt cacagcaaca gagctcagtt 480
 aaatgcaact gcaagtaggt tactgtgaaga tgtttaagat aaaagttctt ccagtcagtt 540
 tttctcttaa gtgcctgttt gagtttactg aaacagttta cttttgttca ataaagtgtt 600

tatgttgcac ttaaaaaaaaa aaaaaaa

627

<210> 431
<211> 620
<212> PRT
<213> Homo sapiens

<400> 431
Met Arg Arg Ser Glu Val Leu Ala Glu Glu Ser Ile Val Cys Leu Gln
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Lys Ala Leu Asn His Leu Arg Glu Ile Trp Glu Leu Ile Gly Ile Pro
20 25 30
Glu Asp Gln Arg Leu Gln Arg Thr Glu Val Val Lys Lys His Ile Lys
35 40 45
Glu Leu Leu Asp Met Met Ile Ala Glu Glu Glu Ser Leu Lys Glu Arg
50 55 60
Leu Ile Lys Ser Ile Ser Val Cys Gln Lys Glu Leu Asn Thr Leu Cys
65 70 75 80
Ser Glu Leu His Val Glu Pro Phe Gln Glu Glu Gly Glu Thr Thr Ile
85 90 95
Leu Gln Leu Glu Lys Asp Leu Arg Thr Gln Val Glu Leu Met Arg Lys
100 105 110
Gln Lys Lys Glu Arg Lys Gln Glu Leu Lys Leu Leu Gln Glu Gln Asp
115 120 125
Gln Glu Leu Cys Glu Ile Leu Cys Met Pro His Tyr Asp Ile Asp Ser
130 135 140
Ala Ser Val Pro Ser Leu Glu Glu Leu Asn Gln Phe Arg Gln His Val
145 150 155 160
Thr Thr Leu Arg Glu Thr Lys Ala Ser Arg Arg Glu Glu Phe Val Ser
165 170 175
Ile Lys Arg Gln Ile Ile Leu Cys Met Glu Glu Leu Asp His Thr Pro
180 185 190
Asp Thr Ser Phe Glu Arg Asp Val Val Cys Glu Asp Glu Asp Ala Phe
195 200 205
Cys Leu Ser Leu Glu Asn Ile Ala Thr Leu Gln Lys Leu Leu Arg Gln
210 215 220
Leu Glu Met Gln Lys Ser Gln Asn Glu Ala Val Cys Glu Gly Leu Arg
225 230 235 240
Thr Gln Ile Arg Glu Leu Trp Asp Arg Leu Gln Ile Pro Glu Glu Glu
245 250 255
Arg Glu Ala Val Ala Thr Ile Met Ser Gly Ser Lys Ala Lys Val Arg
260 265 270
Lys Ala Leu Gln Leu Glu Val Asp Arg Leu Glu Glu Leu Lys Met Gln
275 280 285
Asn Met Lys Lys Val Ile Glu Ala Ile Arg Val Glu Leu Val Gln Tyr
290 295 300
Trp Asp Gln Cys Phe Tyr Ser Gln Glu Gln Arg Gln Ala Phe Ala Pro
305 310 315 320
Phe Cys Ala Glu Asp Tyr Thr Glu Ser Leu Leu Gln Leu His Asp Ala
325 330 335
Glu Ile Val Arg Leu Lys Asn Tyr Tyr Glu Val His Lys Glu Leu Phe
340 345 350
Glu Gly Val Gln Lys Trp Glu Glu Thr Trp Arg Leu Phe Leu Glu Phe
355 360 365
Glu Arg Lys Ala Ser Asp Pro Asn Arg Phe Thr Asn Arg Gly Gly Asn
370 375 380
Leu Leu Lys Glu Glu Lys Gln Arg Ala Lys Leu Gln Lys Met Leu Pro

385 390 395 400
 Lys Leu Glu Glu Glu Leu Lys Ala Arg Ile Glu Leu Trp Glu Gln Glu
 405 410 415
 His Ser Lys Ala Phe Met Val Asn Gly Gln Lys Phe Met Glu Tyr Val
 420 425 430
 Ala Glu Gln Trp Glu Met His Arg Leu Glu Lys Glu Arg Ala Lys Gln
 435 440 445
 Glu Arg Gln Leu Lys Asn Lys Lys Gln Thr Glu Thr Glu Met Leu Tyr
 450 455 460
 Gly Ser Ala Pro Arg Thr Pro Ser Lys Arg Arg Gly Leu Ala Pro Asn
 465 470 475 480
 Thr Pro Gly Lys Ala Arg Lys Leu Asn Thr Thr Thr Met Ser Asn Ala
 485 490 495
 Thr Ala Asn Ser Ser Ile Arg Pro Ile Phe Gly Gly Thr Val Tyr His
 500 505 510
 Ser Pro Val Ser Arg Leu Pro Pro Ser Gly Ser Lys Pro Val Ala Ala
 515 520 525
 Ser Thr Cys Ser Gly Lys Lys Thr Pro Arg Thr Gly Arg His Gly Ala
 530 535 540
 Asn Lys Glu Asn Leu Glu Leu Asn Gly Ser Ile Leu Ser Gly Gly Tyr
 545 550 555 560
 Pro Gly Ser Ala Pro Leu Gln Arg Asn Phe Ser Ile Asn Ser Val Ala
 565 570 575
 Ser Thr Tyr Ser Glu Phe Ala Lys Asp Pro Ser Leu Ser Asp Ser Ser
 580 585 590
 Thr Val Gly Leu Gln Arg Glu Leu Ser Lys Ala Ser Lys Ser Asp Ala
 595 600 605
 Thr Ser Gly Ile Leu Asn Ser Thr Asn Ile Gln Ser
 610 615 620

<210> 432
 <211> 3044
 <212> DNA
 <213> Homo sapiens

<400> 432
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 ctgcagaaag ccctaaatca ccttcgggaa atatgggagc taattgggat tccagaggac 180
 cagcgggttac aaagaactga ggtggtaaaag aagcatatca aggaactcct ggaatatgat 240
 attgctgaag aggaagacct gaaggaaaga ctcatacaaaa gcatatccgt ctgtcagaaa 300
 gagctgaaca ctctgtgcag cgagttacat gttgagccat ttcaggaaga aggagagacg 360
 accatcttgc aactagaaaa agatttgcgc acccaagtgg aattgatgcg aaaacagaaa 420
 aaggagagaa aacaggaact gaagctactt caagagcaag atcaagaact gtgcgaaatt 480
 ctttgtatgc cccactatga tattgacagt gcctcagtgc ccagcttaga agagctgaac 540
 cagttcaggc aacatgtgac aactttgagg gaaacaaaagg cttctaggcg tgaggagttt 600
 gtcatgataa agagacagat catactgtgt atggaagaat tagaccacac cccagacaca 660
 agctttgaaa gagatgtggt gtgtgaagac gaagatgcct tttgtttgtc tttggagaat 720
 attgcaacac tacaaaagtt gctacggcag ctggaaatgc agaaatcaca aaatgaagca 780
 gtgtgtgagg ggctgcgtac tcaaatccga gagctctggg acaggttgca aatacctgaa 840
 gaagaaagag agagctgtgc caccattatg tctgggtcaa aggccaaagt ccggaagcg 900
 ctgcaattag aagtggatcg gttggaagaa ctgaaatgc aaaacatgaa gaaagtgatt 960
 gaggcaattc gagtggagct gggtcagtac tgggaccagt gcttttatag ccaggagcag 1020
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 gatgctgaga ttgtgcggtt aaaaaactac tatgaagttc acaaggaact ctttgaaggt 1140
 gtccagaagt gggaagaaac ctggaggcct ttcttagagt ttgagagaaa agcttcagat 1200

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caggaacatt caaaggcatt tatggtgaat gggcagaaat tcatggagta tgtggcagaa 1380
caatgggaga tgcacgcatt ggagaaagag agagccaagc aggaagaca actgaagaac 1440
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taaaataaaa tcgtatactt acatttcaaa aaaaaaaaaa aaaa 3044

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<210> 433
 <211> 313
 <212> PRT
 <213> Homo sapiens

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<400> 433
Met Pro Val Ala Gly Ser Glu Leu Pro Arg Arg Pro Leu Pro Pro Ala
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Ala Gln Glu Arg Asp Ala Glu Pro Arg Pro Pro His Gly Glu Leu Gln
 20           25           30
Tyr Leu Gly Gln Ile Gln His Ile Leu Arg Cys Gly Val Arg Lys Asp
 35           40           45
Asp Arg Thr Gly Thr Gly Thr Leu Ser Val Phe Gly Met Gln Ala Arg
 50           55           60
Tyr Ser Leu Arg Asp Glu Phe Pro Leu Leu Thr Thr Lys Arg Val Phe
 65           70           75           80
Trp Lys Gly Val Leu Glu Glu Leu Leu Trp Phe Ile Lys Gly Ser Thr
 85           90           95
Asn Ala Lys Glu Leu Ser Ser Lys Gly Val Lys Ile Trp Asp Ala Asn
100          105          110
Gly Ser Arg Asp Phe Leu Asp Ser Leu Gly Phe Ser Thr Arg Glu Glu
115          120          125
Gly Asp Leu Gly Pro Val Tyr Gly Phe Gln Trp Arg His Phe Gly Ala
130          135          140
Glu Tyr Arg Asp Met Glu Ser Asp Tyr Ser Gly Gln Gly Val Asp Gln

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145	150	155	160
Leu Gln Arg Val Ile Asp Thr Ile Lys Thr Asn Pro Asp Asp Arg Arg			
	165	170	175
Ile Ile Met Cys Ala Trp Asn Pro Arg Asp Leu Pro Leu Met Ala Leu			
	180	185	190
Pro Pro Cys His Ala Leu Cys Gln Phe Tyr Val Val Asn Ser Glu Leu			
	195	200	205
Ser Cys Gln Leu Tyr Gln Arg Ser Gly Asp Met Gly Leu Gly Val Pro			
	210	215	220
Phe Asn Ile Ala Ser Tyr Ala Leu Leu Thr Tyr Met Ile Ala His Ile			
	225	230	235
Thr Gly Leu Lys Pro Gly Asp Phe Ile His Thr Leu Gly Asp Ala His			
	245	250	255
Ile Tyr Leu Asn His Ile Glu Pro Leu Lys Ile Gln Leu Gln Arg Glu			
	260	265	270
Pro Arg Pro Phe Pro Lys Leu Arg Ile Leu Arg Lys Val Glu Lys Ile			
	275	280	285
Asp Asp Phe Lys Ala Glu Asp Phe Gln Ile Glu Gly Tyr Asn Pro His			
	290	295	300
Pro Thr Ile Lys Met Glu Met Ala Val			
305	310		

<210> 434
 <211> 1536
 <212> DNA
 <213> Homo sapiens

<400> 434
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 tcggagctgc cgcgccggcc cttgcccccc gcgcacacagg agcgggacgc cgagcccgct 180
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 agcctgagag atgaattccc tctgctgaca accaaacgtg tgttctggaa ggggtgtttt 360
 gaggagtgc tgtggtttat caagggatcc acaaatgcta aagagctgtc ttccaaggga 420
 gtgaaaatct gggatgcca tggatcccca gacttttttg acagcctggg attctccacc 480
 agagaagaag gggactttggg cccagtttat ggcttccagt ggaggcattt tggggcagaa 540
 tacagagata tggatcaga ttattcagga caggaggttg accaactgca aagagtgtat 600
 gacaccatca aaaccaaccc tgacgacaga agaatcatca tgtgcgcttg gaatccaaga 660
 gatcttcttc tgatggcgct gcctccatgc catgccctct gccagtcta tgtgtgtaac 720
 agtgagctgt cctgccagct gtaccagaga tcgggagaca tgggcctcgg tgtgcctttc 780
 aacatcgcca gctacgcctt gctcacgtac atgattgcgc acatcacggg cctgaagcca 840
 ggtgacttta tacacacttg gggagatgca catatttacc tgaatcacat cgagccactg 900
 aaaaatcagc ttcagcgaga acccagacct ttcccaaagc tcaggattct tcgaaaagtt 960
 gagaaaattg atgacttcaa agctgaagac tttcagattg aagggtacaa tccgcatcca 1020
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 aactaggtca aaaatctgtc cgtgacctat cagttattaa tttttaagga tgttgcaact 1200
 ggcaaatgta actgtgccag ttctttccat aataaaaggc tttgagttaa ctactgagg 1260
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 caaaaacatg tatgtgcatt tcaatcccaac gtaactataa agaaggttgg tgaatttcac 1380
 aagctatttt tggaaatttt ttagaatttt ttaagaattt cacaagctat tccctcaaat 1440
 ctgagggagc tgagtaacac catcgatcat gatgtagagt gtggttatga actttatagt 1500
 tgttttatat gttgctataa taaagaagtg ttctgc 1536

<210> 435

<211> 225
 <212> PRT
 <213> Homo sapiens

<400> 435
 Met Asn Ser Asn Val Glu Asn Leu Pro Pro His Ile Ile Arg Leu Val
 1 5 10 15
 Tyr Lys Glu Val Thr Thr Leu Thr Ala Asp Pro Pro Asp Gly Ile Lys
 20 25 30
 Val Phe Pro Asn Glu Glu Asp Leu Thr Asp Leu Gln Val Thr Ile Glu
 35 40 45
 Gly Pro Glu Gly Thr Pro Tyr Ala Gly Gly Leu Phe Arg Met Lys Leu
 50 55 60
 Leu Leu Gly Lys Asp Phe Pro Ala Ser Pro Pro Lys Gly Tyr Phe Leu
 65 70 75 80
 Thr Lys Ile Phe His Pro Asn Val Gly Ala Asn Gly Glu Ile Cys Val
 85 90 95
 Asn Val Leu Lys Arg Asp Trp Thr Ala Glu Leu Gly Ile Arg His Val
 100 105 110
 Leu Leu Thr Ile Lys Cys Leu Leu Ile His Pro Asn Pro Glu Ser Ala
 115 120 125
 Leu Asn Glu Glu Ala Gly Arg Leu Leu Leu Glu Asn Tyr Glu Glu Tyr
 130 135 140
 Ala Ala Arg Ala Arg Leu Leu Thr Glu Ile His Gly Gly Ala Gly Gly
 145 150 155 160
 Pro Ser Gly Arg Ala Glu Ala Gly Arg Ala Leu Ala Ser Gly Thr Glu
 165 170 175
 Ala Ser Ser Thr Asp Pro Gly Ala Pro Gly Gly Pro Gly Gly Ala Glu
 180 185 190
 Gly Pro Met Ala Lys Lys His Ala Gly Glu Arg Asp Lys Lys Leu Ala
 195 200 205
 Ala Lys Lys Lys Thr Asp Lys Lys Arg Ala Leu Arg Ala Leu Arg Arg
 210 215 220
 Leu
 225

<210> 436
 <211> 890
 <212> DNA
 <213> Homo sapiens

<400> 436
 ggcggaccga agaacgcagg aaggggggccc gggggaccgc cccccggcgc gccgcagcca 60
 tgaactccaa cgtggagaaac ctacccccgc acatcatccg cctgggtgtac aaggaggtga 120
 cgacactgac cgcagaccga cccgatggca tcaaggtctt tcccaacgag gaggacctca 180
 ccgacctcca ggtcaccatc gagggccctg aggggacccc atatgctgga ggtctgttcc 240
 gcatgaaact cctgctgggg aaggacttcc ctgcctcccc acccaagggc tacttctga 300
 ccaagatctt ccacccgaac gtgggcgcca atggcgagat ctgcgtcaac gtgctcaaga 360
 gggactggac ggtcgagctg ggcattccgc acgtactgct gaccatcaag tgctgtcta 420
 tccaccctaa ccccgagtct gcaactcaac agggagcggg ccgctgtctc ttggagaact 480
 acgaggagta tgcggctcgg gcccgctctg tcacagagat ccacgggggc gccggcgggc 540
 ccagcggcag ggccgaagcc ggtcggggcc tggccagtgg cactgaagct tctccaccg 600
 accctggggc cccagggggc ccgggagggg ctgaggggtc catggccaag aagcatgctg 660
 gcgagcgcca taagaagctg gcggccaaga aaaagacgga caagaagcgg gcgctgcggg 720
 cgctgcggcg gctgtagtgg gctctcttcc tccttcacc gtgaccccaa cctctctgt 780
 cccctccctc caactctgtc tctaagttat ttaaattatg gctggggctc gggagggtag 840

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890

<210> 437
<211> 197
<212> PRT
<213> Homo sapiens

<400> 437
Met Gln Arg Ala Ser Arg Leu Lys Arg Glu Leu His Met Leu Ala Thr
1 5 10 15
Glu Pro Pro Pro Gly Ile Thr Cys Trp Gln Asp Lys Asp Gln Met Asp
20 25 30
Asp Leu Arg Ala Gln Ile Leu Gly Gly Ala Asn Thr Pro Tyr Glu Lys
35 40 45
Gly Val Phe Lys Leu Glu Val Ile Ile Pro Glu Arg Tyr Pro Phe Glu
50 55 60
Pro Pro Gln Ile Arg Phe Leu Thr Pro Ile Tyr His Pro Asn Ile Asp
65 70 75 80
Ser Ala Gly Arg Ile Cys Leu Asp Val Leu Lys Leu Pro Pro Lys Gly
85 90 95
Ala Trp Arg Pro Ser Leu Asn Ile Ala Thr Val Leu Thr Ser Ile Gln
100 105 110
Leu Leu Met Ser Glu Pro Asn Pro Asp Asp Pro Leu Met Ala Asp Ile
115 120 125
Ser Ser Glu Phe Lys Tyr Asn Lys Pro Ala Phe Leu Lys Asn Ala Arg
130 135 140
Gln Trp Thr Glu Lys His Ala Arg Gln Lys Gln Lys Ala Asp Glu Glu
145 150 155 160
Glu Met Leu Asp Asn Leu Pro Glu Ala Gly Asp Ser Arg Val His Asn
165 170 175
Ser Thr Gln Lys Arg Lys Ala Ser Gln Leu Val Gly Ile Glu Lys Lys
180 185 190
Phe His Pro Asp Val
195

<210> 438
<211> 928
<212> DNA
<213> Homo sapiens

<400> 438
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gggatcatgc agagagcttc acgtctgaag agagagctgc acatgttagc cacagagcca 180
ccccaggcca tcacatgttg gcaagataaa gaccaaattg atgacctgag agctcaataa 240
ttaggtggag ccaacacacc ttatgagaaa ggtgttttta agctagaagt tatcattcct 300
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attgattctg ctggaaggat ttgtctggat gttctcaaat tgccacaaa aggtgcttgg 420
agaccatccc tcaacatcgc aactgtgttg acctctattc agctgctcat gtcgaaccc 480
aacctgatg acccgctcat ggctgacata tcctcagaat ttaaatataa taagccagcc 540
ttctcaaga atgccagaca gtggacagag aagcatgcaa gacagaaaca aaaggctgat 600
gaggaagaga tgcttgataa tctaccagag gctggtgact ccagagtaca caactcaaca 660
cagaaaagga aggcagtcga gctagtaggc atagaaaaga aatttcaccc tgatgtttag 720
gggacttgct ctggttcacg ttagttaatg tgttctttgc caagggtgac taagtgtgct 780
accttgaatt tttttttaa tatatttgat gacataaatt ttgtgtagtt tatttatctt 840
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa

928

<210> 439
<211> 91
<212> PRT
<213> Homo sapiens

<400> 439
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Leu Val Asp Lys Cys Ile Gly Ser Arg Ile His Ile Val Met Lys Ser
20 25 30
Asp Lys Glu Ile Val Gly Thr Leu Leu Gly Phe Asp Asp Phe Val Asn
35 40 45
Met Val Leu Glu Asp Val Thr Glu Phe Glu Ile Thr Pro Glu Gly Arg
50 55 60
Arg Ile Thr Lys Leu Asp Gln Ile Leu Leu Asn Gly Asn Asn Ile Thr
65 70 75 80
Met Leu Val Pro Gly Gly Glu Gly Pro Glu Val
85 90

<210> 440
<211> 749
<212> DNA
<213> Homo sapiens

<400> 440
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tgtataggat caagaattca catcgtgatg aagagtgata aggaattgt tggtagctctt 120
ctaggatttg atgactttgt caatatggta ctggaagatg tcactgagtt tgaaatcaca 180
ccagaaggaa gaaggattac taaattagat cagattttgc taaatggaaa taatataaca 240
atgctggttc ctggaggaga aggacctgaa gtgtgaatga gtttccttga cttacactag 300
attttgtttt ggcttataat gacaagaaaa tggaattttt ttcccactt tctaattgtt 360
aaatcccata aagctaagtt tcccgttaaa gggaagtgtc ttgaagatgt gtaccattt 420
ttgtaagtta atcatgatta tcctggaaaa agaagaaaag aacttcttct ttgcagatg 480
aaaataaaagg tgtttttggt taactgtcat tttgtttatt ctactgcagt agccagtgga 540
acaaagtttg tagttatatt gccacttact tttctgtcat tatatgctta tttgtttgt 600
catttacgtg accatttgat tctcaaacaa aagttgttcc aaacaaaatg atgaactttg 660
atttgaacag gtgcatttaa acaaccggaa atgatcactt agaaaattca attaaaaatgc 720
tgttgttttg taaaaaaaaa aaaaaaaaaa 749

<210> 441
<211> 642
<212> PRT
<213> Homo sapiens

<400> 441
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Gln Glu Leu Arg Ser Gln Asp Val Asn Lys Gln Gly Leu Tyr Thr Pro
20 25 30
Gln Thr Lys Glu Lys Pro Thr Phe Gly Lys Leu Ser Ile Asn Lys Pro
35 40 45
Thr Ser Glu Arg Lys Val Ser Leu Phe Gly Lys Arg Thr Ser Gly His
50 55 60
Gly Ser Arg Asn Ser Gln Leu Gly Ile Phe Ser Ser Ser Glu Lys Ile

65					70					75				80
Lys	Asp	Pro	Arg	Pro	Leu	Asn	Asp	Lys	Ala	Phe	Ile	Gln	Gln	Cys
				85					90					95
Arg	Gln	Leu	Cys	Glu	Phe	Leu	Thr	Glu	Asn	Gly	Tyr	Ala	His	Asn
			100					105					110	Val
Ser	Met	Lys	Ser	Leu	Gln	Ala	Pro	Ser	Val	Lys	Asp	Phe	Leu	Lys
		115					120					125		Ile
Phe	Thr	Phe	Leu	Tyr	Gly	Phe	Leu	Cys	Pro	Ser	Tyr	Glu	Leu	Pro
	130					135					140			Asp
Thr	Lys	Phe	Glu	Glu	Glu	Val	Pro	Arg	Ile	Phe	Lys	Asp	Leu	Gly
	145				150					155				160
Pro	Phe	Ala	Leu	Ser	Lys	Ser	Ser	Met	Tyr	Thr	Val	Gly	Ala	Pro
				165					170					175
Thr	Trp	Pro	His	Ile	Val	Ala	Ala	Leu	Val	Trp	Leu	Ile	Asp	Cys
			180					185					190	Ile
Lys	Ile	His	Thr	Ala	Met	Lys	Glu	Ser	Ser	Pro	Leu	Phe	Asp	Asp
	195						200					205		Gly
Gln	Pro	Trp	Gly	Glu	Glu	Thr	Glu	Asp	Gly	Ile	Met	His	Asn	Lys
	210					215					220			Leu
Phe	Leu	Asp	Tyr	Thr	Ile	Lys	Cys	Tyr	Glu	Ser	Phe	Met	Ser	Gly
	225				230				235					240
Asp	Ser	Phe	Asp	Glu	Met	Asn	Ala	Glu	Leu	Gln	Ser	Lys	Leu	Lys
				245				250						255
Leu	Phe	Asn	Val	Asp	Ala	Phe	Lys	Leu	Glu	Ser	Leu	Glu	Ala	Lys
		260						265					270	Asn
Arg	Ala	Leu	Asn	Glu	Gln	Ile	Ala	Arg	Leu	Glu	Gln	Glu	Arg	Glu
		275					280					285		Lys
Glu	Pro	Asn	Arg	Leu	Glu	Ser	Leu	Arg	Lys	Leu	Lys	Ala	Ser	Leu
	290					295					300			Gln
Gly	Asp	Val	Gln	Lys	Tyr	Gln	Ala	Tyr	Met	Ser	Asn	Leu	Glu	Ser
	305				310				315					320
Ser	Ala	Ile	Leu	Asp	Gln	Lys	Leu	Asn	Gly	Leu	Asn	Glu	Glu	Ile
			325						330					335
Arg	Val	Glu	Leu	Glu	Cys	Glu	Thr	Ile	Lys	Gln	Glu	Asn	Thr	Arg
		340						345					350	Leu
Gln	Asn	Ile	Ile	Asp	Asn	Gln	Lys	Tyr	Ser	Val	Ala	Asp	Ile	Glu
	355						360					365		Arg
Ile	Asn	His	Glu	Arg	Asn	Glu	Leu	Gln	Gln	Thr	Ile	Asn	Lys	Leu
	370				375						380			Thr
Lys	Asp	Leu	Glu	Ala	Glu	Gln	Gln	Lys	Leu	Trp	Asn	Glu	Glu	Leu
	385				390				395					Lys
Tyr	Ala	Arg	Gly	Lys	Glu	Ala	Ile	Glu	Thr	Gln	Leu	Ala	Glu	Tyr
			405					410					415	His
Lys	Leu	Ala	Arg	Lys	Leu	Lys	Leu	Ile	Pro	Lys	Gly	Ala	Glu	Asn
		420						425				430		Ser
Lys	Gly	Tyr	Asp	Phe	Glu	Ile	Lys	Phe	Asn	Pro	Glu	Ala	Gly	Ala
	435						440					445		Asn
Cys	Leu	Val	Lys	Tyr	Arg	Ala	Gln	Val	Tyr	Val	Pro	Leu	Lys	Glu
	450					455					460			Leu
Leu	Asn	Glu	Thr	Glu	Glu	Glu	Ile	Asn	Lys	Ala	Leu	Asn	Lys	Lys
	465				470				475					Met
Gly	Leu	Glu	Asp	Thr	Leu	Glu	Gln	Leu	Asn	Ala	Met	Ile	Thr	Glu
			485					490					495	Ser
Lys	Arg	Ser	Val	Arg	Thr	Leu	Lys	Glu	Glu	Val	Gln	Lys	Leu	Asp
			500					505				510		Asp
Leu	Tyr	Gln	Gln	Lys	Ile	Lys	Glu	Ala	Glu	Glu	Glu	Asp	Glu	Lys
			515				520					525		Cys

Ala Ser Glu Leu Glu Ser Leu Glu Lys His Lys His Leu Leu Glu Ser
 530 535 540
 Thr Val Asn Gln Gly Leu Ser Glu Ala Met Asn Glu Leu Asp Ala Val
 545 550 555 560
 Gln Arg Glu Tyr Gln Leu Val Val Gln Thr Thr Thr Glu Glu Arg Arg
 565 570 575
 Lys Val Gly Asn Asn Leu Gln Arg Leu Leu Glu Met Val Ala Thr His
 580 585 590
 Val Gly Ser Val Glu Lys His Leu Glu Glu Gln Ile Ala Lys Val Asp
 595 600 605
 Arg Glu Tyr Glu Glu Cys Met Ser Glu Asp Leu Ser Glu Asn Ile Lys
 610 615 620
 Glu Ile Arg Asp Lys Tyr Glu Lys Lys Ala Thr Leu Ile Lys Ser Ser
 625 630 635 640
 Glu Glu

<210> 442
 <211> 2150
 <212> DNA
 <213> Homo sapiens

<400> 442
 ctgcagccac gaaggccccc ctgtcctgtc tagcagatac ttgcacggtt tacagaaatt 60
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 tttccagcgg tgggtgctggc cgcctctcca tgcaggagtt aagatcccag gatgtaaaata 180
 aacaaggcct ctataccctc caaaccaaaag agaaaccaac ctttggaag ttgagtataa 240
 acaaacgcac atctgaaaga aaagtctcgc tatttggcaa aagaactagt ggacatggat 300
 ccgggaatag tcaacttgggt atattttcca gttctgagaa aatcaaggac ccgagaccac 360
 ttaatgacaa agcatttcatt cagcagtgtg ttcgacaact ctgtgagttt cttacagaaa 420
 atggttatgc acataatgtg tccatgaaat ctctacaagc tccctctgtt aaagacttcc 480
 tgaagatctt cacatttctt tatggcttcc tgtgcccctc atacgaactt cctgacacaa 540
 agtttgaaga agaggttcca agaactctta aagaccttgg gtatcctttt gcaactatcca 600
 aaagctccat gtacacagtg ggggtcctc atacatggcc tcacattgtg gcagccttag 660
 tttggctaata agactgcac aagatacata ctgccatgaa agaaagctca cctttatttg 720
 atgatgggca gccttgggga gaagaaactg aagatggaat tatgcataat aagttgtttt 780
 tggactacac cataaaatgc tatgagagtt ttatgagtg tgcgcagacg tttgatgaga 840
 tgaatgcaga gctgcagtc aaactgaagg atttatttaa tgtggatgct ttaagctgg 900
 aatcattaga agcaaaaaac agagcattga atgaacagat tgcaagattg gaacaagaaa 960
 gagaaaaaga accgaatcgt cttagagtcgt tgagaaaact gaaggcttcc ttacaaggag 1020
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 agaaattaaa tggctcctcaat gaggaatttg ctagagtaga actagaatgt gaacaataa 1140
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 acctggaagc tgaacaacag aagttgttga atgaggagtt aaaatatgcc agaggcaaa 1320
 aagcgattga acacaatta gcagagatc acaaattggc tagaaaaa aaacttattc 1380
 ctaaggttgc ttgagaattcc aaggtttatg actttgaaat taagtttaac cccgagctg 1440
 gtgccaactg cctgtcaaaa tacagggctc aagtttatgt acctcttaag gaactcctga 1500
 atgaaactga agaagaaatt aataaagccc taaataaaaa atggggttgg gaggatactt 1560
 tagaacaatt gaatgcaatg ataacagaaa gcaagagaag tgtgagaact ctgaaagaag 1620
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 aaaaatgtgc cagtgcagctt ggtccttgg agaaacacaa gcacctgcta gaaagtactg 1740
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 aagttgatag agaatatgaa gaatgcattg cagaagatct ctcggaatat attaaagaga 1980

ttagagataa gtatgagaag aaagctactc taattaagtc ttctgaagaa tgaagataaa 2040
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<210> 443
 <211> 380
 <212> PRT
 <213> Homo sapiens

<400> 443

Met	Gly	Ile	Gln	Gly	Leu	Ala	Lys	Leu	Ile	Ala	Asp	Val	Ala	Pro	Ser
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Ala	Ile	Arg	Glu	Asn	Asp	Ile	Lys	Ser	Tyr	Phe	Gly	Arg	Lys	Val	Ala
		20					25					30			
Ile	Asp	Ala	Ser	Met	Ser	Ile	Tyr	Gln	Phe	Leu	Ile	Ala	Val	Arg	Gln
		35				40					45				
Gly	Gly	Asp	Val	Leu	Gln	Asn	Glu	Glu	Gly	Glu	Thr	Thr	Ser	His	Leu
	50				55					60					
Met	Gly	Met	Phe	Tyr	Arg	Thr	Ile	Arg	Met	Met	Glu	Asn	Gly	Ile	Lys
65				70					75				80		
Pro	Val	Tyr	Val	Phe	Asp	Gly	Lys	Pro	Pro	Gln	Leu	Lys	Ser	Gly	Glu
			85					90				95			
Leu	Ala	Lys	Arg	Ser	Glu	Arg	Arg	Ala	Glu	Ala	Glu	Lys	Gln	Leu	Gln
		100					105				110				
Gln	Ala	Gln	Ala	Ala	Gly	Ala	Glu	Gln	Glu	Val	Glu	Lys	Phe	Thr	Lys
	115					120					125				
Arg	Leu	Val	Lys	Val	Thr	Lys	Gln	His	Asn	Asp	Glu	Cys	Lys	His	Leu
130						135					140				
Leu	Ser	Leu	Met	Gly	Ile	Pro	Tyr	Leu	Asp	Ala	Pro	Ser	Glu	Ala	Glu
145				150					155				160		
Ala	Ser	Cys	Ala	Ala	Leu	Val	Lys	Ala	Gly	Lys	Val	Tyr	Ala	Ala	Ala
		165						170				175			
Thr	Glu	Asp	Met	Asp	Cys	Leu	Thr	Phe	Gly	Ser	Pro	Val	Leu	Met	Arg
		180					185					190			
His	Leu	Thr	Ala	Ser	Glu	Ala	Lys	Lys	Leu	Pro	Ile	Gln	Glu	Phe	His
	195						200				205				
Leu	Ser	Arg	Ile	Leu	Gln	Glu	Leu	Gly	Leu	Asn	Gln	Glu	Gln	Phe	Val
210					215					220					
Asp	Leu	Cys	Ile	Leu	Leu	Gly	Ser	Asp	Tyr	Cys	Glu	Ser	Ile	Arg	Gly
225			230						235				240		
Ile	Gly	Pro	Lys	Arg	Ala	Val	Asp	Leu	Ile	Gln	Lys	His	Lys	Ser	Ile
		245						250				255			
Glu	Glu	Ile	Val	Arg	Arg	Leu	Asp	Pro	Asn	Lys	Tyr	Pro	Val	Pro	Glu
		260					265					270			
Asn	Trp	Leu	His	Lys	Glu	Ala	His	Gln	Leu	Phe	Leu	Glu	Pro	Glu	Val
	275					280					285				
Leu	Asp	Pro	Glu	Ser	Val	Glu	Leu	Lys	Trp	Ser	Glu	Pro	Asn	Glu	Glu
290					295					300					
Glu	Leu	Ile	Lys	Phe	Met	Cys	Gly	Glu	Lys	Gln	Phe	Ser	Glu	Glu	Arg
305				310					315				320		
Ile	Arg	Ser	Gly	Val	Lys	Arg	Leu	Ser	Lys	Ser	Arg	Gln	Gly	Ser	Thr
		325						330				335			
Gln	Gly	Arg	Leu	Asp	Asp	Phe	Phe	Lys	Val	Thr	Gly	Ser	Leu	Ser	Ser
		340					345					350			
Ala	Lys	Arg	Lys	Glu	Pro	Glu	Pro	Lys	Gly	Ser	Thr	Lys	Lys	Lys	Ala
	355					360					365				
Lys	Thr	Gly	Ala	Ala	Gly	Lys	Phe	Lys	Arg	Gly	Lys				

<210> 444
 <211> 2265
 <212> DNA
 <213> Homo sapiens

<400> 444
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 gggactggtt gccatgagag cagccgtctg aggggacgca gcctgcacta cgcgccccaa 180
 gaggctgtgc gtggcgagca ggtcacgtga cgggagcgcg ggctttggaa ggcggctgaa 240
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 agtatccggg gtattgggcc caagcgggct gtggacctca tccagaagca caagagcatc 1140
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 aagtggagcg agccaaatga agaagagctg atcaagttca tgtgtggtga aaagcagttc 1320
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 ctgtaccct taagagctac agctagagaa accttcacgg ggtggagaga ggattctaa 1620
 gcttttctag cgtgacctt ttcagttagt ctagtccctt ttttacttga tcttaatggc 1680
 aagaaggcca cagaggtact tttccttttt tagctcagga aaatatgtca ggctcaaacc 1740
 acttctcagg cagttaaatg gacactaaat ccattgttac atgaaagtga tagatagcaa 1800
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 ttcctggctg gccactgggt ggccagtggt aggtgatggt ggacctagac tgtgcttttc 1920
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 ctgtgtttgt gactgattac tggctgtgtc ttgggtgggc agaaaactcg acttgctatg 2100
 taatttgtgt ctagtatttc agaggagtaa gatggtgatg ttcacctggc aatcagctga 2160
 gttgagactt tggataaaga cactgggttt catgcgctgt ttttgtttta aagttatgaa 2220
 gaaaaaagtc aataaaattc taaaagtaaa aaaaaaaaaa aaaaa 2265

<210> 445
 <211> 277
 <212> PRT
 <213> Homo sapiens

<400> 445
 Met Glu Ala Ala Glu Thr Glu Ala Glu Ala Ala Ala Leu Glu Val Leu
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 Ala Glu Val Ala Gly Ile Leu Glu Pro Val Gly Leu Gln Glu Glu Ala

20 25 30
 Glu Leu Pro Ala Lys Ile Leu Val Glu Phe Val Val Asp Ser Gln Lys
 35 40 45
 Lys Asp Lys Leu Leu Cys Ser Gln Leu Gln Val Ala Asp Phe Leu Gln
 50 55 60
 Asn Ile Leu Ala Gln Glu Asp Thr Ala Lys Gly Leu Asp Pro Leu Ala
 65 70 75 80
 Ser Glu Asp Thr Ser Arg Gln Lys Ala Ile Ala Ala Lys Glu Gln Trp
 85 90 95
 Lys Glu Leu Lys Ala Thr Tyr Arg Glu His Val Glu Ala Ile Lys Ile
 100 105 110
 Gly Leu Thr Lys Ala Leu Thr Gln Met Glu Glu Ala Gln Arg Lys Arg
 115 120 125
 Thr Gln Leu Arg Glu Ala Phe Glu Gln Leu Gln Ala Lys Lys Gln Met
 130 135 140
 Ala Met Glu Lys Arg Arg Ala Val Gln Asn Gln Trp Gln Leu Gln Gln
 145 150 155 160
 Glu Lys His Leu Gln His Leu Ala Glu Val Ser Ala Glu Val Arg Glu
 165 170 175
 Arg Lys Thr Gly Thr Gln Gln Glu Leu Asp Arg Val Phe Gln Lys Leu
 180 185 190
 Gly Asn Leu Lys Gln Gln Ala Glu Gln Glu Arg Asp Lys Leu Gln Arg
 195 200 205
 Tyr Gln Thr Phe Leu Gln Leu Tyr Thr Leu Gln Gly Lys Leu Leu
 210 215 220
 Phe Pro Glu Ala Glu Ala Glu Ala Glu Asn Leu Pro Asp Asp Lys Pro
 225 230 235 240
 Gln Gln Pro Thr Arg Pro Gln Glu Gln Ser Thr Gly Asp Thr Met Gly
 245 250 255
 Arg Asp Pro Gly Val Ser Phe Lys Ala Val Gly Leu Gln Pro Ala Gly
 260 265 270
 Asp Val Asn Leu Pro
 275

<210> 446
 <211> 1658
 <212> DNA
 <213> Homo sapiens

<400> 446
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 ctgagaggtcc tggctgaggt ggcaggcatc ttggaacctg taggcctgca ggaggaggca 120
 gaactgccag ccaagatcct ggttgagttt gtggtggact ctcaagaaga agacaagctg 180
 ctctgcagcc agcttcaggt agcggatttc ctgcagaaca tcctggctca ggaggacact 240
 gctaagggtc tcgacccctt ggcttctgaa gacacgagcc gacagaaggc aattgcagct 300
 aaggaacaat ggaagagact gaaggccacc tacagggagc acgtagaggc catcaaaatt 360
 ggctcaccac aggcctgac tcagatggag gaagcccaga ggaacggac acaactccgg 420
 gaagcctttg agcagctcca ggccaagaaa caaatggcca tggagaaacg cagagcagtc 480
 cagaaccagt ggcagctaca acaggagaag catctgcagc atctggcgga ggtttctgca 540
 gaggtgaggg agcgtaaagc agggactcag caggagcttg acagggtgtt tcagaaaactt 600
 ggaaacctga agcagcaggc agaacaggag cgggacaagc tgcagaggta tcagaccttc 660
 ctccagcttc tgtataccct gcagggttaag ctggtgttcc ctgaggctga ggctgaggca 720
 gagaatcttc catagtataa accccagcag ccgactcgac ccagaggaga gaggtaggca 780
 gacacatggg ggagagaccc tgggtgtgtc ttcaaggctg ttggtctaca acctgctgga 840
 gatgtaaatt tgccatgact tcctggagga cagcagcatg gagaaagatc ctagaaaagg 900
 cctctgactt ccctcacctc ccaaccatca ttacaggaac gactgtgaac tcctgagttc 960

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agcttgattt ctgactacat cccagcaagc tctggcatct gtggattaaa atccctggat 1020
ctctctcagt tgtgtatttg ttcattctta tatgctggca ggaacaacta ttaatacaga 1080
tactcagaag ccaataacat gacaggagct gggactgggt tgaacacagg gtgtgcagat 1140
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aggaggagaa tgttttaggc aggtgggttat atgtgggaag ataattttat tcatggatcc 1260
aaatgtttgt tgagtccctt ctttgtgcta aggttcttgc ggtgaaccag aattataaca 1320
gtgagctcat ctgactgttt taggatgtac agcctagtgt taacattctt ggtatctttt 1380
tgtgccttat ctaaaacatt tctcgatcac tggtttcaga tgttcattta ttatattctt 1440
ttcaaagatt cagagattgg cttttgtcat ccactattgt atgttttgtt tcatggacct 1500
ctagtgtatac cttgatcttt cccactttct gttttcggat tggagaagat gtaccttttt 1560
tgtcaactct tacttttatc agatgatcaa ctcaactatt tggatcttta tttgttttct 1620
caataaata ttttaaggta aaaaaaaaaa aaaaaaaa 1658

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<210> 447
<211> 277
<212> PRT
<213> Homo sapiens

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<400> 447
Met Glu Ala Ala Glu Thr Glu Ala Glu Ala Ala Ala Leu Glu Val Leu
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Ala Glu Val Ala Gly Ile Leu Glu Pro Val Gly Leu Gln Glu Glu Ala
20     25     30
Glu Leu Pro Ala Lys Ile Leu Val Glu Phe Val Val Asp Ser Gln Lys
35     40     45
Lys Asp Lys Leu Leu Cys Ser Gln Leu Gln Val Ala Asp Phe Leu Gln
50     55     60
Asn Ile Leu Ala Gln Glu Asp Thr Ala Lys Gly Leu Asp Pro Leu Ala
65     70     75     80
Ser Glu Asp Thr Ser Arg Gln Lys Ala Ile Ala Ala Lys Glu Gln Trp
85     90     95
Lys Glu Leu Lys Ala Thr Tyr Arg Glu His Val Glu Ala Ile Lys Ile
100    105    110
Gly Leu Thr Lys Ala Leu Thr Gln Met Glu Glu Ala Gln Arg Lys Arg
115    120    125
Thr Gln Leu Arg Glu Ala Phe Glu Gln Leu Gln Ala Lys Lys Gln Met
130    135    140
Ala Met Glu Lys Arg Arg Ala Val Gln Asn Gln Trp Gln Leu Gln Gln
145    150    155    160
Glu Lys His Leu Gln His Leu Ala Glu Val Ser Ala Glu Val Arg Glu
165    170    175
Arg Lys Thr Gly Thr Gln Gln Glu Leu Asp Arg Val Phe Gln Lys Leu
180    185    190
Gly Asn Leu Lys Gln Gln Ala Glu Gln Glu Arg Asp Lys Leu Gln Arg
195    200    205
Tyr Gln Thr Phe Leu Gln Leu Leu Tyr Thr Leu Gln Gly Lys Leu Leu
210    215    220
Phe Pro Glu Ala Glu Ala Glu Ala Glu Asn Leu Pro Asp Asp Lys Pro
225    230    235    240
Gln Gln Pro Thr Arg Pro Gln Glu Gln Ser Thr Gly Asp Thr Met Gly
245    250    255
Arg Asp Pro Gly Val Ser Phe Lys Ala Val Gly Leu Gln Pro Ala Gly
260    265    270
Asp Val Asn Leu Pro
275

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<210> 448
 <211> 1851
 <212> DNA
 <213> Homo sapiens

<400> 448
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 ctagagggtcc tggctgaggt ggcaggcatc ttggaacctg taggcctgca ggaggaggca 120
 gaactgccag ccaagatcct ggttgagttt gtggtggact ctgagaaga agacaagctg 180
 ctctgcagcc agcttcaggt agcggatttc ctgcagaaca tcttggtctca ggaggacact 240
 gctaagggtc tcgacccctt ggcttctgaa gacacgagcc gacagaaggc aattgcagct 300
 aaggaacaat ggaagagct gaaggccacc tacaggggagc acgtagaggc catcaaaatt 360
 ggctccacca aggcctgac tcagatggag gaagcccaga ggaacggac acaactccgg 420
 gaagcctttg agcagctcca ggccaagaaa caaatggcca tggagaaacg cagagcagtc 480
 cagaaccagt ggcagctaca acaggagaag catctgcagc atctggcgga ggtttctgca 540
 gaggtgaggg agcgtagac agggactcag caggagcttg acagggtggt tcagaaactt 600
 ggaaacctga agcagcaggc agaacaggag cgggacaagc tgcagaggta tcgaccttc 660
 ctccagcttc tgtataccct gcagggttaag ctgttgttcc ctgaggctga ggctgaggca 720
 gagaatcttc catgatgata accccagcag ccgactcgac ccaggaggca gagtacagga 780
 gacacccatgg gagagagacc tgggtgtgtcc ttcaaggctg ttggtctaca acctgctgga 840
 gatgtaaatt tgccatgact tcctggagga cagcagcatg gagaaagatc ctagaaaagg 900
 tcagacccaa ctcaggcctt ggtgtccctg gactgcaagt gtggaaggag ggaagcctg 960
 gtttacctct ctctgcactc gagctctgct acccatggag cagatggatg gtgggaacag 1020
 gaaagagctt atgttacacc tcattcccat gcttagccca ccagagcta accctgtct 1080
 tctccccag gcctctgact tccctcacct cccaaccatc attacaggaa agactgtgaa 1140
 ctcttgagtt cagcttgatt tctgactaca tcccagcaag ctctggcatc tgtggattaa 1200
 aatccctgga tctctctcag ttgtgtattt gttcatcttc atatgctggc aggaacaact 1260
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 ggtgtgcaga tggggagggg gtactggcct tgggcctcct atgatgcaga catgggtaat 1380
 ttaattcaag gaggaggaga atgttttagg cagggtggtta tatgtgggaa gataatttta 1440
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 ttataacagt gacgtcatct gactgtttta ggatgtacag cctagtgtta acattcttgg 1560
 tatctttttg tgccttatct aaaacatttc tcgatcactg gtttcagatg ttcatattat 1620
 atattctttt caaagattca gagattggct ttgtcatcc actattgtat gttttgtttc 1680
 attgacctct agtgatacct tgatctttcc cactttctgt ttccgaggtg gagaagatgt 1740
 acctttttt tcaactctta cttttatcag atgatcaact cagctatttg gatctttatt 1800
 tgttttctca aataaatatt taagggttaaa aaaaaaaaaa aaaaaaaaaa a 1851

<210> 449
 <211> 211
 <212> PRT
 <213> Homo sapiens

<400> 449
 Met Ala Ala Arg Arg Gly Ala Leu Ile Val Leu Glu Gly Val Asp Arg
 1 5 10 15
 Ala Gly Lys Ser Thr Gln Ser Arg Lys Leu Val Glu Ala Leu Ser Arg
 20 25 30
 Gly Pro Pro Pro Glu Leu Leu Arg Phe Pro Glu Arg Ser Thr Glu Ile
 35 40 45
 Gly Lys Leu Leu Ser Ser Tyr Leu Gln Lys Lys Ser Asp Val Glu Asp
 50 55 60
 His Ser Val His Leu Leu Phe Ser Ala Asn Arg Trp Glu Gln Val Pro
 65 70 75 80
 Leu Ile Lys Glu Lys Leu Ser Gln Gly Val Thr Leu Val Val Asp Arg
 85 90 95
 Tyr Ala Phe Ser Gly Val Ala Phe Thr Gly Ala Lys Glu Asn Phe Ser

100 105 110
 Leu Asp Trp Cys Lys Gln Pro Asp Val Gly Leu Pro Lys Pro Asp Leu
 115 120 125
 Val Leu Phe Leu Gln Leu Gln Leu Ala Asp Ala Ala Lys Arg Gly Ala
 130 135 140
 Phe Gly His Glu Arg Tyr Glu Asn Gly Ala Phe Gln Glu Arg Ala Leu
 145 150 155 160
 Arg Cys Phe His Gln Leu Met Lys Asp Thr Thr Leu Asn Trp Lys Met
 165 170 175
 Val Asp Ala Ser Lys Arg Leu Glu Ala Val His Glu Glu Leu Arg Val
 180 185 190
 Leu Ser Glu Asp Ala Ile Arg Thr Ala Thr Glu Lys Pro Leu Gly Glu
 195 200 205
 Leu Trp Lys
 210

<210> 450
 <211> 1000
 <212> DNA
 <213> Homo sapiens

<400> 450
 aattcgccag cgggcggtg gacagtcatt gggggccggc ggggggctct catagtgtctg 60
 gagggcggtg accgcgcggg gaagagcagc cagagccgca agctggtgga agcgctgtcg 120
 cgcgggccac cgcccgaaact gctccggttc cgggaaagat caactgaaat cggcaaaactt 180
 ctgagttcct acttgcaaaa gaaaagtgcac gtggaggatc actcgtgtgca cctgcttttt 240
 tctgcaaatc gctgggaaca agtgccgtta attaaggaaa agttgagcca gggcgtgacc 300
 ctgctgtgtg acagatacgc attttctggt gtggccttca cgggtgccaa ggagaatttt 360
 tcctagatag ggtgtaaaca gccagacgtg ggccttccca aaccgcacct ggtcctgttc 420
 ctccagttac agctggcgga tgctgccaaag cggggagcgt ttggccatga gcgctatgag 480
 aacggggcct tccaggagcg ggcgctccgg tgtttccacc agctcatgaa agacacgact 540
 ttgaactgga agatggtgga tgcttccaaa agactcgaag ctgtccatga ggaactccgc 600
 gtgctctctg aggacgcat ccgcactgcc acagagaagc cgctggggga gctatggaag 660
 tgaccaagg ctgcccactg gagacgcctc tccctgcagt ccccgagag gctgggagact 720
 cgcggaaggc ccgctcccca gcggagtcca gacccacaa cttcaggagc tctttcccg 780
 cagcagagat ctgcaggctg cctcttctgc cccggagctg ggggtgcactg gggacccccg 840
 tgggtggggac cttggcagtg tggacatgag cagagcgatg gagcagctctc ctgccctctc 900
 cctgtgtctg atggcactct gttgtatttt cttactgaag ttcagtgata actctgagca 960
 gtttcattgt gateactgta aatggtaatc agttggaatt 1000

<210> 451
 <211> 282
 <212> PRT
 <213> Homo sapiens

<400> 451
 Met Pro Leu Leu Thr Gln Gln Ile Gln Asp Glu Asp Asp Gln Tyr Ser
 1 5 10 15
 Leu Val Ala Ser Leu Asp Asn Val Arg Asn Leu Ser Thr Ile Leu Lys
 20 25 30
 Ala Ile His Phe Arg Glu His Ala Thr Cys Phe Ala Thr Lys Asn Gly
 35 40 45
 Ile Lys Val Thr Val Glu Asn Ala Lys Cys Val Gln Ala Asn Ala Phe
 50 55 60
 Ile Gln Ala Gly Ile Phe Gln Glu Phe Lys Val Gln Glu Glu Ser Val
 65 70 75 80

Thr Phe Arg Ile Asn Leu Thr Val Leu Leu Asp Cys Leu Ser Ile Phe
 85 90 95
 Gly Ser Ser Pro Met Pro Gly Thr Leu Thr Ala Leu Arg Met Cys Tyr
 100 105 110
 Gln Gly Tyr Gly Tyr Pro Leu Met Leu Phe Leu Glu Glu Gly Gly Val
 115 120 125
 Val Thr Val Cys Lys Ile Asn Thr Gln Glu Pro Glu Glu Thr Leu Asp
 130 135 140
 Phe Asp Phe Cys Ser Thr Asn Val Ile Asn Lys Ile Ile Leu Gln Ser
 145 150 155 160
 Glu Gly Leu Arg Glu Ala Phe Ser Glu Leu Asp Met Thr Ser Glu Val
 165 170 175
 Leu Gln Ile Thr Met Ser Pro Asp Lys Pro Tyr Phe Arg Leu Ser Thr
 180 185 190
 Phe Gly Asn Ala Gly Ser Ser His Leu Asp Tyr Pro Lys Asp Ser Asp
 195 200 205
 Leu Met Glu Ala Phe His Cys Asn Gln Thr Gln Val Asn Arg Tyr Lys
 210 215 220
 Ile Ser Leu Leu Lys Pro Ser Thr Lys Ala Leu Val Leu Ser Cys Lys
 225 230 235 240
 Val Ser Ile Arg Thr Asp Asn Arg Gly Phe Leu Ser Leu Gln Tyr Met
 245 250 255
 Ile Arg Asn Glu Asp Gly Gln Ile Cys Phe Val Glu Tyr Tyr Cys Cys
 260 265 270
 Pro Asp Glu Glu Val Pro Glu Ser Glu Ser
 275 280

<210> 452
 <211> 1776
 <212> DNA
 <213> Homo sapiens

<400> 452
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 ctccctccgg tctcgggtggc gcggcacgcg cggctctcta ggctccttc agctctgtgg 120
 tgacgggtggc cgaggtggag ggccggtctg aagagtggcg ggactggctt cacttctctc 180
 gcgggttcctc ggagccgcct cgctcctctt cagggaacttt gctgagaagg gctctcgggc 240
 gtccagaccc caccgcaaag gtgtttggcg atccgcccag aagttgttgg cccagaggagc 300
 atccctcggg gccgaatgcg cagtggacga tgccccttct gacccaacag atccaagacg 360
 aggatgatca gtacagcctt gtggccagcc ttgacaacgt taggaatctc tccactatct 420
 tgaagctat tcatttccga gaacatgcc cgtgtttcgc aactaaaaat ggtatcaaa 480
 taacagtggg aaatgcaaag tgtgtgcaag caaatgcttt tattcaggct ggaatatttc 540
 aggaagttaa agttcaggaa gagtctgtta cttttcgaat taatttaact gtccttttag 600
 actgtttatc ttttttggga tcaagtccca tgccagggac tttaactgca cttcgaatgt 660
 gttaccaagg ttatggttac cctttgatgc tgttcctgga agaaggagga gtggtgacag 720
 tctgcaaaat caatacacag gaacctgagg agacctgga ctttgatttc tgagcacca 780
 atgttattaa taaaattatt ctgcagtcag aggggctccg tgaagcattt tctgaattgg 840
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 ctacttttgg aaatgcagga agttcccacc ttgactatcc caaagattct gatttgatgg 960
 aagcatttca ttgtaatcag acccaagtca acagatacaa gatttcctta ctgaaacctt 1020
 ctacaaaggc attagtccca tctgttaagg tatctattcg gacagataac agaggcttcc 1080
 ttccattaca gtatgatgatt agaaatgaag atggacaaat atgttttgtg gaatattact 1140
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 atgtgtacat ttatgataga tgaagttctt attctgagta cagtactctt tgtcatttca 1260
 tattggattt tctatagaga agaagcacia tggggaagat agggagcaagg tcatgtacc 1320
 taatagttac tatgttttgt aaatccattt tgtagagggc atgtaataa atgttttct 1380

340										345										350										
Pro	Pro	Arg	Arg	Leu	Gly	Glu	Arg	Ser	Gly	Leu	Lys	Pro	Pro	Leu	Arg															
			355						360						365															
Lys	Ala	Ala	Val	Arg	Gln	Gln	Lys	Ala	Pro	Gln	Glu	Val	Glu	Glu	Asp															
			370						375						380															
Asp	Gly	Arg	Ser	Gly	Ala	Gly	Glu	Asp	Pro	Pro	Met	Pro	Ala	Ser	Arg															
							390								400															
Gly	Ser	Tyr	His	Leu	Asp	Trp	Asp	Lys	Met	Asp	Asp	Pro	Asn	Phe	Ile															
					405					410					415															
Pro	Phe	Gly	Gly	Asp	Thr	Lys	Ser	Gly	Cys	Ser	Glu	Ala	Gln	Pro	Pro															
					420					425					430															
Glu	Ser	Pro	Glu	Thr	Arg	Leu	Gly	Gln	Pro	Ala	Ala	Glu	Gln	Leu	His															
					435					440					445															
Ala	Gly	Pro	Ala	Thr	Glu	Glu	Pro	Gly	Pro	Cys	Leu	Ser	Gln	Gln	Leu															
					450					455					460															
His	Ser	Ala	Ser	Ala	Glu	Asp	Thr	Pro	Val	Val	Gln	Leu	Ala	Ala	Glu															
					465					470					475															
Thr	Pro	Thr	Ala	Glu	Ser	Lys	Glu	Arg	Ala	Leu	Asn	Ser	Ala	Ser	Thr															
					485					490					495															
Ser	Leu	Pro	Thr	Ser	Cys	Pro	Gly	Ser	Glu	Pro	Val	Pro	Thr	His	Gln															
					500					505					510															
Gln	Gly	Gln	Pro	Ala	Leu	Glu	Leu	Lys	Glu	Glu	Ser	Phe	Arg	Asp	Pro															
					515					520					525															
Ala	Glu	Val	Leu	Gly	Thr	Gly	Ala	Glu	Val	Asp	Tyr	Leu	Glu	Gln	Phe															
					530					535					540															
Gly	Thr	Ser	Ser	Phe	Lys	Glu	Ser	Ala	Leu	Arg	Lys	Gln	Ser	Leu	Tyr															
					545					550					555															
Leu	Lys	Phe	Asp	Pro	Leu	Leu	Arg	Asp	Ser	Pro	Gly	Arg	Pro	Val	Pro															
					565					570					575															
Val	Ala	Thr	Glu	Thr	Ser	Ser	Met	His	Gly	Ala	Asn	Glu	Thr	Pro	Ser															
					580					585					590															
Gly	Arg	Pro	Arg	Glu	Ala	Lys	Leu	Val	Glu	Phe	Asp	Phe	Leu	Gly	Ala															
					595					600					605															
Leu	Asp	Ile	Pro	Val	Pro	Gly	Pro	Pro	Pro	Gly	Val	Pro	Ala	Pro	Gly															
							615								620															
Gly	Pro	Pro	Leu	Ser	Thr	Gly	Pro	Ile	Val	Asp	Leu	Leu	Gln	Tyr	Ser															
					625					630					635															
Gln	Lys	Asp	Leu	Asp	Ala	Val	Val	Lys	Ala	Thr	Gln	Glu	Glu	Asn	Arg															
					645					650					655															
Glu	Leu	Arg	Ser	Arg	Cys	Glu	Glu	Leu	His	Gly	Lys	Asn	Leu	Glu	Leu															
					660					665					670															
Gly	Lys	Ile	Met	Asp	Arg	Phe	Glu	Glu	Val	Val	Tyr	Gln	Ala	Met	Glu															
					675					680					685															
Glu	Val	Gln	Lys	Gln	Lys	Glu	Leu	Ser	Lys	Ala	Glu	Ile	Gln	Lys	Val															
					690					695					700															
Leu	Lys	Glu	Lys	Asp	Gln	Leu	Thr	Thr	Asp	Leu	Asn	Ser	Met	Glu	Lys															
					705					710					715															
Ser	Phe	Ser	Asp	Leu	Phe	Lys	Arg	Phe	Glu	Lys	Gln	Lys	Glu	Val	Ile															
					725					730					735															
Glu	Gly	Tyr	Arg	Lys	Asn	Glu	Glu	Ser	Leu	Lys	Lys	Cys	Val	Glu	Asp															
					740					745					750															
Tyr	Leu	Ala	Arg	Ile	Thr	Gln	Glu	Gly	Gln	Arg	Tyr	Gln	Ala	Leu	Lys															
					755					760					765															
Ala	His	Ala	Glu	Glu	Lys	Leu	Gln	Leu	Ala	Asn	Glu	Glu	Ile	Ala	Gln															
					770					775					780															
Val	Arg	Ser	Lys	Ala	Gln	Ala	Glu	Ala	Leu	Ala	Leu	Gln	Ala	Ser	Leu															
					785					790					800															

Arg Lys Glu Gln Met Arg Ile Gln Ser Leu Glu Lys Thr Val Glu Gln
 805 810 815
 Lys Thr Lys Glu Asn Glu Glu Leu Thr Arg Ile Cys Asp Asp Leu Ile
 820 825 830
 Ser Lys Met Glu Lys Ile
 835

<210> 454
 <211> 2788
 <212> DNA
 <213> Homo sapiens

<400> 454
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 ggcgccggcg gcgccccgc agagcccgcc aacggcgccg cgggcagaat gagtctcgag 120
 gtcttaaacg acaaaaatgt cagcaatgaa aaaaatacag aaaattcgga cttcctgttt 180
 tcgccaccag aagttaccgg aagatcgtct gttcttcgtg tgtcacagaa agaaaatgtg 240
 ccaccaaga acctggccaa agctatgaag gtgacttttc agacacctct gcgggatcca 300
 cagacgcaca ggattctaag tcctagcatg gccagcaaac ttgaggctcc ttctactcag 360
 gatgacaccc ttggactgga aaactcacac ccggtctgga cacagaaaga gaaccaacag 420
 ctcatcaagg aagtggatgc caaaactact catggaattc tacagaaacc agtggaggct 480
 gacaccgacc tcctggggga tgcaagccca gccttggga gtggcagctc cagcgagtct 540
 ggcccggtg ccctggctga cctggactgc tcaagctctt cccagagccc aggaagttct 600
 gagaacaaa tgggtgtctc aggaatgtg tctggcagcc ctgagcaagc cgtggaggaa 660
 aacttagtt cctattcctt agacagaaga gtgacacccg cctctgagac cctagaagac 720
 cctgcagga cagatccca gcacaaagcg gagactccgc acggagccga ggaagaatgc 780
 aaagcggaga ctccgcacgg agccgaggag gaatgcgggc acggtggggt ctgtgctccc 840
 gcagcagtg ccacttcgcc tcctggtgca atccctaagg aagcctcggg aggagcacc 900
 ctgcagggtc tgctggcga agccctgggc tgccctgagg gtgtgggcac ccccggtcca 960
 gcagatggca ctacagacct tacctgtgca cacacctctg cctctgagac cagagccca 1020
 accaaccacc tgggtgctgg cagggccatg accctgagtc ctgaggaaga agtggctgca 1080
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 ggcccaacca gcaaaaggcg accccaccca aggagactgg gagagaggtt cggcctcaag 1200
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<210> 455
 <211> 720
 <212> PRT
 <213> Homo sapiens

<400> 455
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 20 25 30
 Glu Val Phe Phe Gly Pro Phe Gly His Lys Glu Arg Cys Ile Ala Ala
 35 40 45
 Ser Leu Glu Leu Asn Asn Pro Val Pro Glu Gln Pro Pro Leu Pro Thr
 50 55 60
 Ser Glu Ser Pro Phe Ala Trp Ser Pro Leu Ala Gly Glu Lys Phe Val
 65 70 75 80
 Glu Val Tyr Lys Glu Ala His Leu Leu Ala Leu His Ile Glu Ser Ser
 85 90 95
 Ser Arg Asn Gln Ala Ala Gln Ala Ala Lys Pro Glu Asp Pro Arg Ser
 100 105 110
 Gln Gly Val Glu Arg Phe Ile Gln Glu Ser Lys Leu Lys Ile Asn Leu
 115 120 125
 Phe Glu Lys Glu Lys Glu Met Lys Lys Ser Pro Thr Ser Leu Lys Arg
 130 135 140
 Glu Thr Tyr Tyr Leu Ser Asp Ser Pro Leu Leu Gly Pro Pro Val Gly
 145 150 155 160
 Glu Pro Arg Leu Leu Ala Ser Ser Pro Ala Leu Pro Ser Ser Gly Ala
 165 170 175
 Gln Ala Arg Leu Thr Arg Ala Pro Gly Pro Pro His Ser Ala His Ala
 180 185 190
 Leu Pro Arg Glu Ser Cys Thr Ala His Ala Ala Ser Gln Ala Ala Thr
 195 200 205
 Gln Arg Lys Pro Gly Thr Lys Leu Leu Leu Pro Arg Ala Ala Ser Val
 210 215 220
 Arg Gly Arg Ser Ile Pro Gly Ala Ala Glu Lys Pro Lys Lys Glu Ile
 225 230 235 240
 Pro Ala Ser Pro Ser Arg Thr Lys Ile Pro Ala Glu Lys Glu Ser His
 245 250 255
 Arg Asp Val Leu Pro Asp Lys Pro Ala Pro Gly Ala Val Asn Val Pro
 260 265 270
 Ala Ala Gly Ser His Leu Gly Gln Gly Lys Arg Ala Ile Pro Val Pro
 275 280 285
 Asn Lys Leu Gly Leu Lys Lys Thr Leu Leu Lys Ala Pro Gly Ser Thr
 290 295 300
 Ser Asn Leu Ala Arg Lys Ser Ser Ser Gly Pro Val Trp Ser Gly Ala
 305 310 315 320
 Ser Ser Ala Cys Thr Ser Pro Ala Val Gly Lys Ala Lys Ser Ser Glu
 325 330 335
 Phe Ala Ser Ile Pro Ala Asn Ser Ser Arg Pro Leu Ser Asn Ile Ser
 340 345 350
 Lys Ser Gly Arg Met Gly Pro Ala Met Leu Arg Pro Ala Leu Pro Ala
 355 360 365

Gly Pro Val Gly Ala Ser Ser Trp Gln Ala Lys Arg Val Asp Val Ser
 370 375 380
 Glu Leu Ala Ala Glu Gln Leu Thr Ala Pro Pro Ser Ala Ser Pro Thr
 385 390 395 400
 Gln Pro Gln Thr Pro Glu Gly Gly Gly Gln Trp Leu Asn Ser Ser Cys
 405 410 415
 Ala Trp Ser Glu Ser Ser Gln Leu Asn Lys Thr Arg Ser Ile Arg Arg
 420 425 430
 Arg Asp Ser Cys Leu Asn Ser Lys Thr Lys Val Met Pro Thr Pro Thr
 435 440 445
 Asn Gln Phe Lys Ile Pro Lys Phe Ser Ile Gly Asp Ser Pro Asp Ser
 450 455 460
 Ser Thr Pro Lys Leu Ser Arg Ala Gln Arg Pro Gln Ser Cys Thr Ser
 465 470 475 480
 Val Gly Arg Val Thr Val His Ser Thr Pro Val Arg Arg Ser Ser Gly
 485 490 495
 Pro Ala Pro Gln Ser Leu Leu Ser Ala Arg Arg Val Ser Ala Leu Pro
 500 505 510
 Thr Pro Ala Ser Arg Arg Cys Ser Gly Leu Pro Pro Met Thr Pro Lys
 515 520 525
 Thr Met Pro Arg Ala Val Gly Ser Pro Leu Cys Val Pro Ala Arg Arg
 530 535 540
 Arg Ser Ser Glu Pro Arg Lys Asn Ser Ala Met Arg Thr Glu Pro Thr
 545 550 555 560
 Arg Glu Ser Asn Arg Lys Thr Asp Ser Arg Leu Val Asp Val Ser Pro
 565 570 575
 Asp Arg Gly Ser Pro Pro Ser Arg Val Pro Gln Ala Leu Asn Phe Ser
 580 585 590
 Pro Glu Glu Ser Asp Ser Thr Phe Ser Lys Ser Thr Ala Thr Glu Val
 595 600 605
 Ala Arg Glu Glu Ala Lys Pro Gly Gly Asp Ala Ala Pro Ser Glu Ala
 610 615 620
 Leu Leu Val Asp Ile Lys Leu Glu Pro Leu Ala Val Thr Pro Asp Ala
 625 630 635 640
 Ala Ser Gln Pro Leu Ile Asp Leu Pro Leu Ile Asp Phe Cys Asp Thr
 645 650 655
 Pro Glu Ala His Val Ala Val Gly Ser Glu Ser Arg Pro Leu Ile Asp
 660 665 670
 Leu Met Thr Asn Thr Pro Asp Met Asn Lys Asn Val Ala Lys Pro Ser
 675 680 685
 Pro Val Val Gly Gln Leu Ile Asp Leu Ser Ser Pro Leu Ile Gln Leu
 690 695 700
 Ser Pro Glu Ala Asp Lys Glu Asn Val Asp Ser Pro Leu Leu Lys Phe
 705 710 715 720

<210> 456
 <211> 2917
 <212> DNA
 <213> Homo sapiens

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 cattgtcttc ttcgagtgc aatgaagatg atgaagtctt cttcgacc cttggacata 180
 aagaaagatg tattgctgcc agcttggaa taaataatcc ggttcccgaa cagcctccgt 240
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 cccaagctgc caagcctgaa gacctccgga gccaggcggt ggaagattc ataccaggagt 420
 caaaaattaaa aataaacctc tttgagaaag aaaaggaaat gaagaaaagc cccagctctc 480
 ttaaaaggga gacatactac ctgtcagaca gccccttgct ggggccccct gtgggtgagc 540
 ctgcgctctt ggctctctcc ccggccctgc ccagctctgg tgcaggggcc cgctcacc 600
 gggcgccggg gcctccgcac tctgtctcatg ctttgcccag ggaatcagtc atgtctcatg 660
 ctgcaagtca ggcagcgact cagaggaagc ccgggaccaa attgtgctgt cctcgagcgg 720
 cctctgttag aggaagaagc atccctgggg ctgaggagaa gcccagaaga gagattccag 780
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 aggttatgcc tactcttaca aatcaattta aaattcctaa gttttctatt ggtgactccc 1440
 cggagactc aacaccaag ctttcgcccgg cacagcggcc gcagtcgtgc acgtcagttg 1500
 gcagggtcac tgtccacagc accccgggta gacgctcatc tgggcccagca ccacaagcc 1560
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 ttccaccgat gacccccaaa acgatgccca gggccgtggg ctctcccctg tgtgtgccag 1680
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 aaatggactt attgaagcat aaaaaaaaa aaaaaaa 2917

<210> 457
 <211> 389
 <212> PRT
 <213> Homo sapiens

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 Leu Gln Leu Ser Pro Leu Lys Gly Leu Ser Leu Val Asp Lys Glu Asn
 20 25 30
 Thr Pro Pro Ala Leu Ser Gly Thr Arg Val Leu Ala Ser Lys Thr Ala
 35 40 45

Arg Arg Ile Phe Gln Glu Pro Thr Glu Pro Lys Thr Lys Ala Ala Ala
 50 55 60
 Pro Gly Val Glu Asp Glu Pro Leu Leu Arg Glu Asn Pro Arg Arg Phe
 65 70 75 80
 Val Ile Phe Pro Ile Glu Tyr His Asp Ile Trp Gln Met Tyr Lys Lys
 85 90 95
 Ala Glu Ala Ser Phe Trp Thr Ala Glu Glu Val Asp Leu Ser Lys Asp
 100 105 110
 Ile Gln His Trp Glu Ser Leu Lys Pro Glu Glu Arg Tyr Phe Ile Ser
 115 120 125
 His Val Leu Ala Phe Phe Ala Ala Ser Asp Gly Ile Val Asn Glu Asn
 130 135 140
 Leu Val Glu Arg Phe Ser Gln Glu Val Gln Ile Thr Glu Ala Arg Cys
 145 150 155 160
 Phe Tyr Gly Phe Gln Ile Ala Met Glu Asn Ile His Ser Glu Met Tyr
 165 170 175
 Ser Leu Leu Ile Asp Thr Tyr Ile Lys Asp Pro Lys Glu Arg Glu Phe
 180 185 190
 Leu Phe Asn Ala Ile Glu Thr Met Pro Cys Val Lys Lys Ala Asp
 195 200 205
 Trp Ala Leu Arg Trp Ile Gly Asp Lys Glu Ala Thr Tyr Gly Glu Arg
 210 215 220
 Val Val Ala Phe Ala Ala Val Glu Gly Ile Phe Phe Ser Gly Ser Phe
 225 230 235 240
 Ala Ser Ile Phe Trp Leu Lys Lys Arg Gly Leu Met Pro Gly Leu Thr
 245 250 255
 Phe Ser Asn Glu Leu Ile Ser Arg Asp Glu Gly Leu His Cys Asp Phe
 260 265 270
 Ala Cys Leu Met Phe Lys His Leu Val His Lys Pro Ser Glu Glu Arg
 275 280 285
 Val Arg Glu Ile Ile Ile Asn Ala Val Arg Ile Glu Gln Glu Phe Leu
 290 295 300
 Thr Glu Ala Leu Pro Val Lys Leu Ile Gly Met Asn Cys Thr Leu Met
 305 310 315 320
 Lys Gln Tyr Ile Glu Phe Val Ala Asp Arg Leu Met Leu Glu Leu Gly
 325 330 335
 Phe Ser Lys Val Phe Arg Val Glu Asn Pro Phe Asp Phe Met Glu Asn
 340 345 350
 Ile Ser Leu Glu Gly Lys Thr Asn Phe Phe Glu Lys Arg Val Gly Glu
 355 360 365
 Tyr Gln Arg Met Gly Val Met Ser Ser Pro Thr Glu Asn Ser Phe Thr
 370 375 380
 Leu Asp Ala Asp Phe
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<210> 458
 <211> 2500
 <212> DNA
 <213> Homo sapiens

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 gtgagggggc gcccggtgcac cctgtccag cgtcctgtc ctggctgctc gctctgcttc 180
 gctgcgcctc cactatgctc tccctccgtg tcccgctcgc gccatcacg gaccgcagc 240
 agctgcagct ctgcgcgctg aaggggctca gcttggtcga caaggagaac acgccgccg 300

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ccctgagcgg gacccgcgtc ctggccagca agaccgcgag gaggatcttc caggagccca 360
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acccccgcg ctttgtcatc ttcccatcgc agtaccatga tatctggcag atgtataaga 480
aggcagaggg ttccttttgg accgcccagg aggttgacct ctccaaggac attcagcact 540
gggaatccct gaaacccgag gagagatatt ttatatccca tgttctgggt ttctttgcag 600
caagcgatgg catagtaaat gaaaacttgg tggagcgatt tagccaagaa gttcagatta 660
cagagcccg catgtttctat ggcttccaaa ttgccatgga aaacatacat tctgaaatgt 720
atagtcttct tattgacact tacataaaa atcccaaaga aagggaattt ctcttcaatg 780
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taaacaaaat gatccaccta agactctgcc cctgttaagt ggtgaaatca actagaggtg 2340
gttctacaaa gttgttcatt ctagttttgt ttggtgtaag taggtgtgtg gagttaattc 2400
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<210> 459
<211> 890
<212> PRT
<213> Homo sapiens

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<400> 459
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20         25         30
Ser Val Val Arg Lys Asn Leu Leu Ser Asp Cys Ser Val Val Ser Thr
35         40         45
Ser Leu Glu Asp Lys Gln Gln Val Pro Ser Glu Asp Ser Met Glu Lys
50         55         60
Val Lys Val Tyr Leu Arg Val Arg Pro Leu Leu Pro Ser Glu Leu Glu
65         70         75         80
Arg Gln Glu Asp Gln Gly Cys Val Arg Ile Glu Asn Val Glu Thr Leu
85         90         95
Val Leu Gln Ala Pro Lys Asp Ser Phe Ala Leu Lys Ser Asn Glu Arg

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Glu Glu Leu Leu Gln Val Val Glu Ala Met Lys Thr Leu Leu Leu Lys
 565 570 575
 Glu Arg Gln Glu Lys Leu Gln Leu Glu Met His Leu Arg Asp Glu Ile
 580 585 590
 Cys Asn Glu Met Val Glu Gln Met Gln Gln Arg Glu Gln Trp Cys Ser
 595 600 605
 Glu His Leu Asp Thr Gln Lys Glu Leu Leu Glu Glu Met Tyr Glu Glu
 610 615 620
 Lys Leu Asn Ile Leu Lys Glu Ser Leu Thr Ser Phe Tyr Gln Glu Glu
 625 630 635 640
 Ile Gln Glu Arg Asp Glu Lys Ile Glu Glu Leu Glu Ala Leu Leu Gln
 645 650 655
 Glu Ala Arg Gln Gln Ser Val Ala His Gln Gln Ser Gly Ser Glu Leu
 660 665 670
 Ala Leu Arg Arg Ser Gln Arg Leu Ala Ala Ser Ala Ser Thr Gln Gln
 675 680 685
 Leu Gln Glu Val Lys Ala Lys Leu Gln Gln Cys Lys Ala Glu Leu Asn
 690 695 700
 Ser Thr Thr Glu Glu Leu His Lys Tyr Gln Lys Met Leu Glu Pro Pro
 705 710 715 720
 Pro Ser Ala Lys Pro Phe Thr Ile Asp Val Asp Lys Lys Leu Glu Glu
 725 730 735
 Gly Gln Lys Asn Ile Arg Leu Leu Arg Thr Glu Leu Gln Lys Leu Gly
 740 745 750
 Glu Ser Leu Gln Ser Ala Glu Arg Ala Cys Cys His Ser Thr Gly Ala
 755 760 765
 Gly Lys Leu Arg Gln Ala Leu Thr Thr Cys Asp Asp Ile Leu Ile Lys
 770 775 780
 Gln Asp Gln Thr Leu Ala Glu Leu Gln Asn Asn Met Val Leu Val Lys
 785 790 795 800
 Leu Asp Leu Arg Lys Lys Ala Ala Cys Ile Ala Glu Gln Tyr His Thr
 805 810 815
 Val Leu Lys Leu Gln Gly Gln Val Ser Ala Lys Lys Arg Leu Gly Thr
 820 825 830
 Asn Gln Glu Asn Gln Gln Pro Asn Gln Gln Pro Pro Gly Lys Lys Pro
 835 840 845
 Phe Leu Arg Asn Leu Leu Pro Arg Thr Pro Thr Cys Gln Ser Ser Thr
 850 855 860
 Asp Cys Ser Pro Tyr Ala Arg Ile Leu Arg Ser Arg Arg Ser Pro Leu
 865 870 875 880
 Leu Lys Ser Gly Pro Phe Gly Lys Lys Tyr
 885 890

<210> 460
 <211> 2972
 <212> DNA
 <213> Homo sapiens

<400> 460
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 aatgtggaga cccttgttct acaagcacc aaggactcgt ttgccctgaa gagcaatgaa 360
 cggggaattg gccaaaccac acacaggttc accttttccc agatcttttg gccagaagtg 420

ggacaggcat ccttcttcaa cctaactgtg aaggagatgg taaaggatgt actcaaaggg 480
 cagaactggc tcatctatac atattggagtc actaactcag gaaaaaccca cagcattcaa 540
 ggtaccatca aggatggagg gattctcccc cggtcctctg cgtgatcttt caatagcctc 600
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 <212> PRT
 <213> Homo sapiens

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 Tyr Val Asp Leu Asp Asp Val Ala Glu Asp Asp Pro Glu Leu Val Asp

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Ser Ile Cys Glu Asn Ala Arg Arg Tyr Ala Lys Leu Phe Ala Asp Ala				
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Val Gln Glu Leu Leu Pro Gln Tyr Lys Glu Arg Glu Val Val Asn Lys				
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Asp Val Leu Asp Val Tyr Ile Glu His Arg Leu Met Met Glu Gln Arg				
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Ser Arg Asp Pro Gly Met Val Arg Ser Pro Gln Asn Gln Tyr Pro Ala				
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Glu Leu Met Arg Arg Phe Glu Leu Tyr Phe Gln Gly Pro Ser Ser Asn				
	130		135	140
Lys Pro Arg Val Ile Arg Glu Val Arg Ala Asp Ser Val Gly Lys Leu				
145	150		155	160
Val Thr Val Arg Gly Ile Val Thr Arg Val Ser Glu Val Lys Pro Lys				
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Met Val Val Ala Thr Tyr Thr Cys Asp Gln Cys Gly Ala Glu Thr Tyr				
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Gln Pro Ile Gln Ser Pro Thr Phe Met Pro Leu Ile Met Cys Pro Ser				
	195		200	205
Gln Glu Cys Gln Thr Asn Arg Ser Gly Gly Arg Leu Tyr Leu Gln Thr				
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Arg Gly Ser Arg Phe Ile Lys Phe Gln Glu Met Lys Met Gln Glu His				
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Ser Asp Gln Val Pro Val Gly Asn Ile Pro Arg Ser Ile Thr Val Leu				
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Val Glu Gly Glu Asn Thr Arg Ile Ala Gln Pro Gly Asp His Val Ser				
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Val Thr Gly Ile Phe Leu Pro Ile Leu Arg Thr Gly Phe Arg Gln Val				
	275		280	285
Val Gln Gly Leu Leu Ser Glu Thr Tyr Leu Glu Ala His Arg Ile Val				
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Lys Met Asn Lys Ser Glu Asp Asp Glu Ser Gly Ala Gly Glu Leu Thr				
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Arg Glu Glu Leu Arg Gln Ile Ala Glu Glu Asp Phe Tyr Glu Lys Leu				
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Ala Ala Ser Ile Ala Pro Glu Ile Tyr Gly His Glu Asp Val Lys Lys				
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Met Lys Ile Arg Gly Asn Ile Asn Ile Cys Leu Met Gly Asp Pro Gly				
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Val Ala Lys Ser Gln Leu Leu Ser Tyr Ile Asp Arg Leu Ala Pro Arg				
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Ala Val Leu Arg Asp Ser Val Ser Gly Glu Leu Thr Leu Glu Gly Gly				
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Ala Leu Val Leu Ala Asp Gln Gly Val Cys Cys Ile Asp Glu Phe Asp				
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Lys Met Ala Glu Ala Asp Arg Thr Ala Ile His Glu Val Met Glu Gln				
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Gln Thr Ile Ser Ile Ala Lys Ala Gly Ile Leu Thr Thr Leu Asn Ala				
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Arg Tyr Ile Ala Met Cys Arg Glu Lys Gln Pro Met Val Pro Glu Ser
565 570 575
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645 650 655
Pro Ala Asp Val Ile Phe Ala Thr Val Arg Glu Leu Val Ser Gly Gly
660 665 670
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675 680 685
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<212> DNA
<213> Homo sapiens

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 <211> 1124
 <212> PRT
 <213> Homo sapiens

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35     40     45
Asn Gln Gln Pro Leu Ser Gly Gly Glu Glu Lys Ser Cys Thr Lys Pro
50     55     60
Ser Pro Ser Lys Lys Arg Cys Ser Asp Asn Thr Glu Val Glu Val Ser
65     70     75     80
Asn Leu Glu Asn Lys Gln Pro Val Glu Ser Thr Ser Ala Lys Ser Cys
85     90     95
Ser Pro Ser Pro Val Ser Pro Gln Val Gln Pro Gln Ala Ala Asp Thr
100    105    110
Ile Ser Asp Ser Val Ala Val Pro Ala Ser Leu Leu Gly Met Arg Arg
115    120    125
Gly Leu Asn Ser Arg Leu Glu Ala Thr Ala Ala Ser Ser Val Lys Thr
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Arg Met Gln Lys Leu Ala Glu Gln Arg Arg Arg Trp Asp Asn Asp Asp
145    150    155    160
Met Thr Asp Asp Ile Pro Glu Ser Ser Leu Phe Ser Pro Met Pro Ser
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Glu Glu Lys Ala Ala Ser Pro Pro Arg Pro Leu Leu Ser Asn Ala Ser
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Ala Thr Pro Val Gly Arg Arg Gly Arg Leu Ala Asn Leu Ala Ala Thr

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Glu Ser Gly Asp Ser Leu Gly Ser Glu Asp Arg Asp Leu Leu Tyr Ser
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 675 680 685
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 690 695 700
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1110

1115

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<211> 4786
<212> DNA
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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Asn Ser Ile Ile Met Leu Glu Ala Leu Glu Arg Val
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<210> 466
<211> 606
<212> DNA
<213> Homo sapiens

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atttatggac aagaagttat cattgaaatt aaatggtggc agacatgtcc aaggaatatt 180
gcggggattt gatcccttta tgaaccttgt gatagatgaa tgtgtggaga tggcgactag 240
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cagctctcat tccagttttt tctaactatga attttcctgg ttgacattga tttcaaaggg 540
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aaaaaa
606

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<210> 467
<211> 971
<212> PRT
<213> Homo sapiens

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Lys Thr Leu Asp Pro Asp Pro Ala Ile Arg Arg Pro Ala Glu Lys Phe
20 25 30
Leu Glu Ser Val Glu Gly Asn Gln Asn Tyr Pro Leu Leu Leu Leu Thr
35 40 45
Leu Leu Glu Lys Ser Gln Asp Asn Val Ile Lys Val Cys Ala Ser Val
50 55 60
Thr Phe Lys Asn Tyr Ile Lys Arg Asn Trp Arg Ile Val Glu Asp Glu
65 70 75 80
Pro Asn Lys Ile Cys Glu Ala Asp Arg Val Ala Ile Lys Ala Asn Ile
85 90 95
Val His Leu Met Leu Ser Ser Pro Glu Gln Ile Gln Lys Gln Leu Ser
100 105 110
Asp Ala Ile Ser Ile Ile Gly Arg Glu Asp Phe Pro Gln Lys Trp Pro
115 120 125
Asp Leu Leu Thr Glu Met Val Asn Arg Phe Gln Ser Gly Asp Phe His
130 135 140
Val Ile Asn Gly Val Leu Arg Thr Ala His Ser Leu Phe Lys Arg Tyr
145 150 155 160
Arg His Glu Phe Lys Ser Asn Glu Leu Trp Thr Glu Ile Lys Leu Val
165 170 175
Leu Asp Ala Phe Ala Leu Pro Leu Thr Asn Leu Phe Lys Ala Thr Ile
180 185 190
Glu Leu Cys Ser Thr His Ala Asn Asp Ala Ser Ala Leu Arg Ile Leu
195 200 205
Phe Ser Ser Leu Ile Leu Ile Ser Lys Leu Phe Tyr Ser Leu Asn Phe
210 215 220
Gln Asp Leu Pro Glu Phe Phe Glu Asp Asn Met Glu Thr Trp Met Asn
225 230 235 240
Asn Phe His Thr Leu Leu Thr Leu Asp Asn Lys Leu Leu Gln Thr Asp
245 250 255
Asp Glu Glu Glu Ala Gly Leu Leu Glu Leu Leu Lys Ser Gln Ile Cys
260 265 270
Asp Asn Ala Ala Leu Tyr Ala Gln Lys Tyr Asp Glu Glu Phe Gln Arg
275 280 285
Tyr Leu Pro Arg Phe Val Thr Ala Ile Trp Asn Leu Leu Val Thr Thr

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290		295		300
Gly Gln Glu Val Lys Tyr Asp Leu Leu Val Ser Asn Ala Ile Gln Phe				
305	310		315	320
Leu Ala Ser Val Cys Glu Arg Pro His Tyr Lys Asn Leu Phe Glu Asp				
	325	330		335
Gln Asn Thr Leu Thr Ser Ile Cys Glu Lys Val Ile Val Pro Asn Met				
	340	345		350
Glu Phe Arg Ala Ala Asp Glu Glu Ala Phe Glu Asp Asn Ser Glu Glu				
	355	360		365
Tyr Ile Arg Arg Asp Leu Glu Gly Ser Asp Ile Asp Thr Arg Arg Arg				
	370	375		380
Ala Ala Cys Asp Leu Val Arg Gly Leu Cys Lys Phe Phe Glu Gly Pro				
385	390		395	400
Val Thr Gly Ile Phe Ser Gly Tyr Val Asn Ser Met Leu Gln Glu Tyr				
	405	410		415
Ala Lys Asn Pro Ser Val Asn Trp Lys His Lys Asp Ala Ala Ile Tyr				
	420	425		430
Leu Val Thr Ser Leu Ala Ser Lys Ala Gln Thr Gln Lys His Gly Ile				
	435	440		445
Thr Gln Ala Asn Glu Leu Val Asn Leu Thr Glu Phe Phe Val Asn His				
	450	455		460
Ile Leu Pro Asp Leu Lys Ser Ala Asn Val Asn Glu Phe Pro Val Leu				
465	470		475	480
Lys Ala Asp Gly Ile Lys Tyr Ile Met Ile Phe Arg Asn Gln Val Pro				
	485	490		495
Lys Glu His Leu Leu Val Ser Ile Pro Leu Leu Ile Asn His Leu Gln				
	500	505		510
Ala Glu Ser Ile Val Val His Thr Tyr Ala Ala His Ala Leu Glu Arg				
	515	520		525
Leu Phe Thr Met Arg Gly Pro Asn Asn Ala Thr Leu Phe Thr Ala Ala				
	530	535		540
Glu Ile Ala Pro Phe Val Glu Ile Leu Leu Thr Asn Leu Phe Lys Ala				
545	550		555	560
Leu Thr Leu Pro Gly Ser Ser Glu Asn Glu Tyr Ile Met Lys Ala Ile				
	565	570		575
Met Arg Ser Phe Ser Leu Leu Gln Glu Ala Ile Ile Pro Tyr Ile Pro				
	580	585		590
Thr Leu Ile Thr Gln Leu Thr Gln Lys Leu Leu Ala Val Ser Lys Asn				
	595	600		605
Pro Ser Lys Pro His Phe Asn His Tyr Met Phe Glu Ala Ile Cys Leu				
	610	615		620
Ser Ile Arg Ile Thr Cys Lys Ala Asn Pro Ala Ala Val Val Asn Phe				
625	630		635	640
Glu Glu Ala Leu Phe Leu Val Phe Thr Glu Ile Leu Gln Asn Asp Val				
	645	650		655
Gln Glu Phe Ile Pro Tyr Val Phe Gln Val Met Ser Leu Leu Leu Glu				
	660	665		670
Thr His Lys Asn Asp Ile Pro Ser Ser Tyr Met Ala Leu Phe Pro His				
	675	680		685
Leu Leu Gln Pro Val Leu Trp Glu Arg Thr Gly Asn Ile Pro Ala Leu				
	690	695		700
Val Arg Leu Leu Gln Ala Phe Leu Glu Arg Gly Ser Asn Thr Ile Ala				
705	710		715	720
Ser Ala Ala Ala Asp Lys Ile Pro Gly Leu Leu Gly Val Phe Gln Lys				
	725	730		735
Leu Ile Ala Ser Lys Ala Asn Asp His Gln Gly Phe Tyr Leu Leu Asn				
	740	745		750

Ser Ile Ile Glu His Met Pro Pro Glu Ser Val Asp Gln Tyr Arg Lys
 755 760 765
 Gln Ile Phe Ile Leu Leu Phe Gln Arg Leu Gln Asn Ser Lys Thr Thr
 770 775 780
 Lys Phe Ile Lys Ser Phe Leu Val Phe Ile Asn Leu Tyr Cys Ile Lys
 785 790 795 800
 Tyr Gly Ala Leu Ala Leu Gln Glu Ile Phe Asp Gly Ile Gln Pro Lys
 805 810 815
 Met Phe Gly Met Val Leu Glu Lys Ile Ile Ile Pro Glu Ile Gln Lys
 820 825 830
 Val Ser Gly Asn Val Glu Lys Lys Ile Cys Ala Val Gly Ile Thr Lys
 835 840 845
 Leu Leu Thr Glu Cys Pro Pro Met Met Asp Thr Glu Tyr Thr Lys Leu
 850 855 860
 Trp Thr Pro Leu Leu Gln Ser Leu Ile Gly Leu Phe Glu Leu Pro Glu
 865 870 875 880
 Asp Asp Thr Ile Pro Asp Glu Glu His Phe Ile Asp Ile Glu Asp Thr
 885 890 895
 Pro Gly Tyr Gln Thr Ala Phe Ser Gln Leu Ala Phe Ala Gly Lys Lys
 900 905 910
 Glu His Asp Pro Val Gly Gln Met Val Asn Asn Pro Lys Ile His Leu
 915 920 925
 Ala Gln Ser Leu His Lys Leu Ser Thr Ala Cys Pro Gly Arg Val Pro
 930 935 940
 Ser Met Val Ser Thr Ser Leu Asn Ala Glu Ala Leu Gln Tyr Leu Gln
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 Gly Tyr Leu Gln Ala Ala Ser Val Thr Leu Leu
 965 970

<210> 468
 <211> 3579
 <212> DNA
 <213> Homo sapiens

<400> 468
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 gagatcctat agcaatggaa ctacgcgatg caaatctgca aacactaaca gaatatattaa 180
 agaaaacact tgatcctgat cctgccatcc gacgtccagc tgagaaatct cttgaatctg 240
 ttgaaggaaa tcagaattat ccactgttgc ttttgacatt actggagaag tcccaggata 300
 atgttatcaa agtatgtgct tcagtaacat tcaaaaaacta tattaaaagg aactggagaa 360
 ttgttgaaga tgaaccaaac aaaattttgtg aagccgatcg agtgccatt aaagccaaca 420
 tagtgcaact gatgcttagc agcccagagc aaattcagaa gcagttaagt gatgcaatta 480
 gcattattgg cagagaagat ttccacaga aatggcctga ctgtctgaca gaaatggtga 540
 atcgctttca gagtgagat ttccatgtta ttaatggagt cctccgtaca gcacattcat 600
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 ttctggatgc ctttgctttg cctttgacta atcttttttaa ggccactatt gaactctgca 720
 gtacccatgc aaatgatgcc tctgccttga ggattctgtt ttcttccctg atctctgatc 780
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 ctgctgatga agaagcattt gaagataatt ctgaggagta cataaggaga gatttggaag 1260

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Lys Cys Leu Val Ile Lys Tyr Ala Lys Asp Thr Arg Tyr Ser Ser Ser
 50 55 60
 Phe Cys Thr His Asp Arg Asn Thr Met Glu Ala Leu Pro Ala Cys Leu
 65 70 75 80
 Leu Arg Asp Val Ala Gln Glu Ala Leu Gly Val Ala Val Ile Gly Ile

85 90 95
 Asp Glu Gly Gln Phe Phe Pro Asp Ile Met Glu Phe Cys Glu Ala Met
 100 105 110
 Ala Asn Ala Gly Lys Thr Val Ile Val Ala Ala Leu Asp Gly Thr Phe
 115 120 125
 Gln Arg Lys Pro Phe Gly Ala Ile Leu Asn Leu Val Pro Leu Ala Glu
 130 135 140
 Ser Val Val Lys Leu Thr Ala Val Cys Met Glu Cys Phe Arg Glu Ala
 145 150 155 160
 Ala Tyr Thr Lys Arg Leu Gly Thr Glu Lys Glu Val Glu Val Ile Gly
 165 170 175
 Gly Ala Asp Lys Tyr His Ser Val Cys Arg Leu Cys Tyr Phe Lys Lys
 180 185 190
 Ala Ser Gly Gln Pro Ala Gly Pro Asp Asn Lys Glu Asn Cys Pro Val
 195 200 205
 Pro Gly Lys Pro Gly Glu Ala Val Ala Ala Arg Lys Leu Phe Ala Pro
 210 215 220
 Gln Gln Ile Leu Gln Cys Ser Pro Ala Asn
 225 230

<210> 470
 <211> 1421
 <212> DNA
 <213> Homo sapiens

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<210> 471
 <211> 792
 <212> PRT
 <213> Homo sapiens

<400> 471

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Phe	Val	Asp	Pro	Ala	Gln	Ile	Thr	Met	Lys	Val	Ile	Gln	Gly	Leu	Tyr	35	40	45	
Ser	Gly	Val	Thr	Thr	Val	Glu	Leu	Asp	Thr	Leu	Ala	Ala	Glu	Thr	Ala	50	55	60	
Ala	Thr	Leu	Thr	Thr	Lys	His	Pro	Asp	Tyr	Ala	Ile	Leu	Ala	Ala	Arg	65	70	75	80
Ile	Ala	Val	Ser	Asn	Leu	His	Lys	Glu	Thr	Lys	Lys	Val	Phe	Ser	Asp	85	90	95	
Val	Met	Glu	Asp	Leu	Tyr	Asn	Tyr	Ile	Asn	Pro	His	Asn	Gly	Lys	His	100	105	110	
Ser	Pro	Met	Val	Ala	Lys	Ser	Thr	Leu	Asp	Ile	Val	Leu	Ala	Asn	Lys	115	120	125	
Asp	Arg	Leu	Asn	Ser	Ala	Ile	Ile	Tyr	Asp	Arg	Asp	Phe	Ser	Tyr	Asn	130	135	140	
Tyr	Phe	Gly	Phe	Lys	Thr	Leu	Glu	Arg	Ser	Tyr	Leu	Leu	Lys	Ile	Asn	145	150	155	160
Gly	Lys	Val	Ala	Glu	Arg	Pro	Gln	His	Met	Leu	Met	Arg	Val	Ser	Val	165	170	175	
Gly	Ile	His	Lys	Glu	Asp	Ile	Asp	Ala	Ala	Ile	Glu	Thr	Tyr	Asn	Leu	180	185	190	
Leu	Ser	Glu	Arg	Trp	Phe	Thr	His	Ala	Ser	Pro	Thr	Leu	Phe	Asn	Ala	195	200	205	
Gly	Thr	Asn	Arg	Pro	Gln	Leu	Ser	Ser	Cys	Phe	Leu	Leu	Ser	Met	Lys	210	215	220	
Asp	Asp	Ser	Ile	Glu	Gly	Ile	Tyr	Asp	Thr	Leu	Lys	Gln	Cys	Ala	Leu	225	230	235	240
Ile	Ser	Lys	Ser	Ala	Gly	Gly	Ile	Gly	Val	Ala	Val	Ser	Cys	Ile	Arg	245	250	255	
Ala	Thr	Gly	Ser	Tyr	Ile	Ala	Gly	Thr	Asn	Gly	Asn	Ser	Asn	Gly	Leu	260	265	270	
Val	Pro	Met	Leu	Arg	Val	Tyr	Asn	Asn	Thr	Ala	Arg	Tyr	Val	Asp	Gln	275	280	285	
Gly	Gly	Asn	Lys	Arg	Pro	Gly	Ala	Phe	Ala	Ile	Tyr	Leu	Glu	Pro	Trp	290	295	300	
His	Leu	Asp	Ile	Phe	Glu	Phe	Leu	Asp	Leu	Lys	Lys	Asn	Thr	Gly	Lys	305	310	315	320
Glu	Glu	Gln	Arg	Ala	Arg	Asp	Leu	Phe	Phe	Ala	Leu	Trp	Ile	Pro	Asp	325	330	335	
Leu	Phe	Met	Lys	Arg	Val	Glu	Thr	Asn	Gln	Asp	Trp	Ser	Leu	Met	Cys	340	345	350	
Pro	Asn	Glu	Cys	Pro	Gly	Leu	Asp	Glu	Val	Trp	Gly	Glu	Glu	Phe	Glu	355	360	365	
Lys	Leu	Tyr	Ala	Ser	Tyr	Glu	Lys	Gln	Gly	Arg	Val	Arg	Lys	Val	Val	370	375	380	
Lys	Ala	Gln	Gln	Leu	Trp	Tyr	Ala	Ile	Ile	Glu	Ser	Gln	Thr	Glu	Thr	385	390	395	400
Gly	Thr	Pro	Tyr	Met	Leu	Tyr	Lys	Asp	Ser	Cys	Asn	Arg	Lys	Ser	Asn	405	410	415	
Gln	Gln	Asn	Leu	Gly	Thr	Ile	Lys	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	420	425	430	
Val	Glu	Tyr	Thr	Ser	Lys	Asp	Glu	Val	Ala	Val	Cys	Asn	Leu	Ala	Ser	435	440	445	

Leu Ala Leu Asn Met Tyr Val Thr Ser Glu His Thr Tyr Asp Phe Lys
 450 455 460
 Lys Leu Ala Glu Val Thr Lys Val Val Val Arg Asn Leu Asn Lys Ile
 465 470 475 480
 Ile Asp Ile Asn Tyr Tyr Pro Val Pro Glu Ala Cys Leu Ser Asn Lys
 485 490 495
 Arg His Arg Pro Ile Gly Ile Gly Val Gln Gly Leu Ala Asp Ala Phe
 500 505 510
 Ile Leu Met Arg Tyr Pro Phe Glu Ser Ala Glu Ala Gln Leu Leu Asn
 515 520 525
 Lys Gln Ile Phe Glu Thr Ile Tyr Tyr Gly Ala Leu Glu Ala Ser Cys
 530 535 540
 Asp Leu Ala Lys Glu Gln Gly Pro Tyr Glu Thr Tyr Glu Gly Ser Pro
 545 550 555 560
 Val Ser Lys Gly Ile Leu Gln Tyr Asp Met Trp Asn Val Thr Pro Thr
 565 570 575
 Asp Leu Trp Asp Trp Lys Val Leu Lys Glu Lys Ile Ala Lys Tyr Gly
 580 585 590
 Ile Arg Asn Ser Leu Leu Ile Ala Pro Met Pro Thr Ala Ser Thr Ala
 595 600 605
 Gln Ile Leu Gly Asn Asn Glu Ser Ile Glu Pro Tyr Thr Ser Asn Ile
 610 615 620
 Tyr Thr Arg Arg Val Leu Ser Gly Glu Phe Gln Ile Val Asn Pro His
 625 630 635 640
 Leu Leu Lys Asp Leu Thr Glu Arg Gly Leu Trp His Glu Glu Met Lys
 645 650 655
 Asn Gln Ile Ile Ala Cys Asn Gly Ser Ile Gln Ser Ile Pro Glu Ile
 660 665 670
 Pro Asp Asp Leu Lys Gln Leu Tyr Lys Thr Val Trp Glu Ile Ser Gln
 675 680 685
 Lys Thr Val Leu Lys Met Ala Ala Glu Arg Gly Ala Phe Ile Asp Gln
 690 695 700
 Ser Gln Ser Leu Asn Ile His Ile Ala Glu Pro Asn Tyr Gly Lys Leu
 705 710 715 720
 Thr Ser Met His Phe Tyr Gly Trp Lys Gln Gly Leu Lys Thr Gly Met
 725 730 735
 Tyr Tyr Leu Arg Thr Arg Pro Ala Ala Asn Pro Ile Gln Phe Thr Leu
 740 745 750
 Asn Lys Glu Lys Leu Lys Asp Lys Glu Lys Val Ser Lys Glu Glu Glu
 755 760 765
 Glu Lys Glu Arg Asn Thr Ala Ala Met Val Cys Ser Leu Glu Asn Arg
 770 775 780
 Asp Glu Cys Leu Met Cys Gly Ser
 785 790

<210> 472
 <211> 3117
 <212> DNA
 <213> Homo sapiens

<400> 472
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 tgagcagcgc ctggaacctc acccttccca ctctgtcacc ttctcgatcc cgccggcgct 180
 ttgagccgc agtcagctct tggatccttc agagcctcag ccactagctc cgatgcatgt 240
 gatcaagcga gatggccgcc aagaacgagt catgtttgac aaaattacat ctcgatcca 300

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<210> 473
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 <212> PRT
 <213> Homo sapiens

<400> 473
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	35					40						45			
Lys	Val	Phe	Tyr	Leu	Asp	Leu	Pro	Ser	Val	Thr	Ile	Ser	Glu	Lys	Leu
	50				55						60				
Gln	Lys	Asp	Ile	Lys	Asp	Leu	Gly	Gly	Arg	Val	Glu	Glu	Phe	Leu	Ser
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Lys	Asp	Ile	Ser	Tyr	Leu	Ile	Ser	Asn	Lys	Lys	Glu	Ala	Lys	Phe	Ala
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Gln	Thr	Leu	Gly	Arg	Ile	Ser	Pro	Val	Pro	Ser	Pro	Glu	Ser	Ala	Tyr
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Thr	Ala	Glu	Thr	Thr	Ser	Pro	His	Pro	Ser	His	Asp	Gly	Ser	Ser	Phe
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Lys	Ser	Pro	Asp	Thr	Val	Cys	Leu	Ser	Arg	Gly	Lys	Leu	Val	Glu	
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Tyr	Tyr	Ile	Glu	Gln	Lys	Lys	Lys	Glu	Leu	Tyr	Leu	Leu	Lys	Lys	Ser
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			260					265					270		
Thr	Asp	Gly	Asp	Lys	Tyr	Gly	Gly	Thr	Ser	Ile	Gln	Leu	Gln	Leu	Lys
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Asp	Leu	Glu	Thr	His	Leu	Leu	Ser	Glu	Gln	His	Arg	Asn	Phe	Ala	Gln
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Ser	Asn	Gln	Tyr	Gln	Val	Val	Asp	Asp	Ile	Val	Ser	Lys	Leu	Val	Phe
			325						330					335	
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Tyr	Ser	Val	Gly	Ser	Leu	Ser	Pro	Val	Ser	Ala	Ser	Val	Leu	Lys	Lys
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Thr	Glu	Gln	Lys	Glu	Lys	Val	Glu	Leu	Gln	His	Ile	Ser	Gln	Lys	Asp
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Cys	Gln	Glu	Asp	Asp	Thr	Thr	Val	Lys	Glu	Gln	Asn	Phe	Leu	Tyr	Lys
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			405					410						415	
Pro	His	Pro	Ser	Asn	Glu	Leu	Arg	Gly	Leu	Asn	Glu	Lys	Met	Ser	Asn
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His Tyr Lys Cys Asn Ile Gln Ala Ser Val His Val Ser Asp Phe Ser
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 515 520 525
 His Asp Ser Gly Leu Ile Thr Ile Asn Ser Ser Gln Glu His Leu Thr
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 Val Gln Ala Lys Ala Pro Phe His Thr Pro Pro Glu Glu Pro Asn Glu
 545 550 555 560
 Cys Asp Phe Lys Asn Met Asp Ser Leu Pro Ser Gly Lys Ile His Arg
 565 570 575
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 595 600 605
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 Ser Glu Glu Lys Ser Glu Phe Leu Gly Phe Thr Ser Tyr Thr Glu Lys
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 Ser Gly Ile Cys Asn Val Leu Asp Ile Trp Glu Glu Glu Asn Ser Asp
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 <211> 3729
 <212> DNA
 <213> Homo sapiens

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 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 475
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 35 40 45
 Phe Ser Asp Asn Glu Ile Arg Lys Leu Asp Gly Phe Pro Leu Leu Arg
 50 55 60
 Arg Leu Lys Thr Leu Leu Val Asn Asn Asn Arg Ile Cys Arg Ile Gly
 65 70 75 80

Glu Gly Leu Asp Gln Ala Leu Pro Cys Leu Thr Glu Leu Ile Leu Thr
 85 90 95
 Asn Asn Ser Leu Val Glu Leu Gly Asp Leu Asp Pro Leu Ala Ser Leu
 100 105 110
 Lys Ser Leu Thr Tyr Leu Ser Ile Leu Arg Asn Pro Val Thr Asn Lys
 115 120 125
 Lys His Tyr Arg Leu Tyr Val Ile Tyr Lys Val Pro Gln Val Arg Val
 130 135 140
 Leu Asp Phe Gln Lys Val Lys Leu Lys Glu Arg Gln Glu Ala Glu Lys
 145 150 155 160
 Met Phe Lys Gly Lys Arg Gly Ala Gln Leu Ala Lys Asp Ile Ala Arg
 165 170 175
 Arg Ser Lys Thr Phe Asn Pro Gly Ala Gly Leu Pro Thr Asp Lys Lys
 180 185 190
 Arg Gly Gly Pro Ser Pro Gly Asp Val Glu Ala Ile Lys Asn Ala Ile
 195 200 205
 Ala Asn Ala Ser Thr Leu Ala Glu Val Glu Arg Leu Lys Gly Leu Leu
 210 215 220
 Gln Ser Gly Gln Ile Pro Gly Arg Glu Arg Arg Ser Gly Pro Thr Asp
 225 230 235 240
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 245 250 255

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 <211> 1054
 <212> DNA
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 <211> 241
 <212> PRT
 <213> Homo sapiens

<400> 477
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 Ile Gly Lys Glu Phe Ile Asp Leu Leu Leu Asp Arg Ile Arg Lys Leu
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 Ala Asp Gln Cys Thr Gly Leu Gln Gly Phe Leu Val Phe His Ser Leu
 65 70 75 80
 Gly Arg Gly Thr Gly Ser Asp Val Thr Ser Phe Leu Met Glu Trp Leu
 85 90 95
 Ser Val Asn Tyr Gly Lys Lys Ser Lys Leu Gly Phe Ser Ile Tyr Pro
 100 105 110
 Ala Pro Gln Val Ser Thr Ala Met Val Gln Pro Tyr Asn Ser Ile Leu
 115 120 125
 Thr Thr His Thr Thr Leu Glu His Ser Asp Cys Ala Phe Met Val Asp
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 Asn Lys Ala Ile Tyr Asp Ile Cys His Arg Asn Leu Asp Ile Glu Arg
 145 150 155 160
 Pro Thr Tyr Thr Asn Leu Asn Arg Leu Ile Ser Gln Ile Val Ser Ser
 165 170 175
 Ile Thr Ala Ser Leu Arg Phe Asp Gly Ala Leu Asn Val Asp Leu Thr
 180 185 190
 Glu Phe Gln Thr Asn Leu Val Ser Tyr Leu Thr Ser Thr Ser Pro Trp
 195 200 205
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 Trp

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 <211> 1380
 <212> DNA
 <213> Homo sapiens

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<210> 479
 <211> 175
 <212> PRT
 <213> Homo sapiens

<400> 479
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 20 25 30
 Thr Ser Arg Val Leu Gln Asn Val Ala Phe Ser Val Gln Lys Glu Val
 35 40 45
 Glu Lys Asn Leu Lys Ser Cys Leu Asp Asn Val Asn Val Val Ser Val
 50 55 60
 Asp Thr Ala Arg Thr Leu Phe Asn Gln Val Met Glu Lys Glu Phe Glu
 65 70 75 80
 Asp Gly Ile Ile Asn Trp Gly Arg Ile Val Thr Ile Phe Ala Phe Glu
 85 90 95
 Gly Ile Leu Ile Lys Lys Leu Leu Arg Gln Gln Ile Ala Pro Asp Val
 100 105 110
 Asp Thr Tyr Lys Glu Ile Ser Tyr Phe Val Ala Glu Phe Ile Met Asn
 115 120 125
 Asn Thr Gly Glu Trp Ile Arg Gln Asn Gly Gly Trp Glu Asn Gly Phe
 130 135 140
 Val Lys Lys Phe Glu Pro Lys Ser Gly Trp Met Thr Phe Leu Glu Val
 145 150 155 160
 Thr Gly Lys Ile Cys Glu Met Leu Ser Leu Leu Lys Gln Tyr Cys
 165 170 175

<210> 480
 <211> 885
 <212> DNA
 <213> Homo sapiens

<400> 480
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 ccaccagcct ccatgtatca tcatgtgtca taactcagtc aagctcagtg agcattctca 120
 gcacattgcc tcaacagctt caaggtgagc cagctcaaga ctttgctctc caccaggcag 180
 aagatgacag actgtgaatt tggatatatt tacaggctgg ctcaggacta tctgcagtgc 240
 gtctacaga taccacaacc tggatcaggt ccaagcaaaa cgtccagagt gctacaaaaa 300
 gttgcgttct cagtcacaaa agaagtggaa aagaatctga agtcattgct ggacaatggt 360
 aatgttgtgt ccgtagacac tgccagaaca ctattcaacc aagtgatgga aaaggagtgt 420
 gaagacggca tcattaactg gggaagaatt gtaaccatat ttgcatttga aggtattctc 480
 ataagaanaa ttctacgaca gcaaattgcc cggatgtgg atacctataa ggagatttca 540
 tattttgttg cggagttcat aatgaataac acaggagaat ggataaggca aaacggaggc 600
 tgggaaaaat gctttgtaaa gaagtttgaa cctaaatctg gctggatgac ttttctagaa 660
 gttacaggaa agatctgtga aatgctatct ctctgaagc aatactgttg accagaaagg 720
 acaactcata ttgtgaaacc ggcctaattt ttctgactga tatggaaacg attgccaaaca 780
 cataactcta cttttaaata aacaactttg atgatgtaac ttgaccttcc agagttatgg 840
 aaattttgtc cccatgtaat gaataaattg tatgtatttt tctct 885

<210> 481
 <211> 104
 <212> PRT
 <213> Homo sapiens

<400> 481
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 20 25 30
 Cys Lys Met Tyr Glu Glu His Leu Lys Arg Met Asn Pro Asn Ser Pro
 35 40 45
 Ser Ile Thr Tyr Asp Ile Ser Gln Leu Phe Asp Phe Ile Asp Asp Leu
 50 55 60
 Ala Asp Leu Ser Cys Leu Val Tyr Arg Ala Asp Thr Gln Thr Tyr Gln
 65 70 75 80
 Pro Tyr Asn Lys Asp Trp Ile Lys Glu Lys Ile Tyr Val Leu Leu Arg
 85 90 95
 Arg Gln Ala Gln Gln Ala Gly Lys
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<210> 482
 <211> 815
 <212> DNA
 <213> Homo sapiens

<400> 482
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 gaacttatgc tgactacgaa tctgtgaatg aatgcatgga aggtgtttgt aaaatgtatg 180
 aagaacatct gaaaagaatg aatcccaaca gtccctctat cacatatgac atcagtcagt 240
 tgtttgattt catcgatgat ctggcagacc tcagctgcct ggtttaccga gctgataccc 300
 agacatacca gccttataac aaagactgga ttaaagagaa gatctacgtg ctcccttcgtc 360
 ggcaggccca acaggctggg aaataattgt gttggaagca ctgggggggt tgggggtggg 420
 ttggaacaca ggtgtgtaca gcgtgctgta gtggaagttt tgtatcatag taatcctggt 480
 tccactttgt tatactctag ccaagattga ctgtattaga tgaaatgtga ggatcctgtt 540
 caatcgga aaacccgttac ctccctcttt tctttctctt tctttttttt ttttttactt 600
 aaacattttt atgatgattt agatggaagt tgttctctgt cacttaagt tggttccagt 660
 ccttcaactg ttcatactca ctttataaca ttcacatact aacccttctt caagatgggg 720
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 aatgtccttt agttataaaa aaaaaaaaaa aaaaa 815

<210> 483
 <211> 857
 <212> PRT
 <213> Homo sapiens

<400> 483
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 Met Asn Lys Val Arg Asp Ile Lys Asn Lys Phe Lys Asn Glu Asp Leu
 20 25 30
 Thr Asp Glu Leu Ser Leu Asn Lys Ile Ser Ala Asp Thr Thr Asp Asn
 35 40 45
 Ser Gly Thr Val Asn Gln Ile Met Met Met Ala Asn Asn Pro Glu Asp

50					55				60										
Trp	Leu	Ser	Leu	Leu	Leu	Lys	Leu	Glu	Lys	Asn	Ser	Val	Pro	Leu	Ser				
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Asp	Ala	Leu	Leu	Asn	Lys	Leu	Ile	Gly	Arg	Tyr	Ser	Gln	Ala	Ile	Glu				
				85					90					95					
Ala	Leu	Pro	Pro	Asp	Lys	Tyr	Gly	Gln	Asn	Glu	Ser	Phe	Ala	Arg	Ile				
			100					105					110						
Gln	Val	Arg	Phe	Ala	Glu	Leu	Lys	Ala	Ile	Gln	Glu	Pro	Asp	Asp	Ala				
		115					120					125							
Arg	Asp	Tyr	Phe	Gln	Met	Ala	Arg	Ala	Asn	Cys	Lys	Lys	Phe	Ala	Phe				
		130				135						140							
Val	His	Ile	Ser	Phe	Ala	Gln	Phe	Glu	Leu	Ser	Gln	Gly	Asn	Val	Lys				
		145			150					155				160					
Lys	Ser	Lys	Gln	Leu	Leu	Gln	Lys	Ala	Val	Glu	Arg	Gly	Ala	Val	Pro				
			165					170						175					
Leu	Glu	Met	Leu	Glu	Ile	Ala	Leu	Arg	Asn	Leu	Asn	Leu	Gln	Lys	Lys				
		180						185					190						
Gln	Leu	Leu	Ser	Glu	Glu	Glu	Lys	Lys	Asn	Leu	Ser	Ala	Ser	Thr	Val				
		195				200						205							
Leu	Thr	Ala	Gln	Glu	Ser	Phe	Ser	Gly	Ser	Leu	Gly	His	Leu	Gln	Asn				
		210				215					220								
Arg	Asn	Asn	Ser	Cys	Asp	Ser	Arg	Gly	Gln	Thr	Thr	Lys	Ala	Arg	Phe				
		225			230				235					240					
Leu	Tyr	Gly	Glu	Asn	Met	Pro	Pro	Gln	Asp	Ala	Glu	Ile	Gly	Tyr	Arg				
			245					250					255						
Asn	Ser	Leu	Arg	Gln	Thr	Asn	Lys	Thr	Lys	Gln	Ser	Cys	Pro	Phe	Gly				
		260						265					270						
Arg	Val	Pro	Val	Asn	Leu	Leu	Asn	Ser	Pro	Asp	Cys	Asp	Val	Lys	Thr				
		275				280						285							
Asp	Asp	Ser	Val	Val	Pro	Cys	Phe	Met	Lys	Arg	Gln	Thr	Ser	Arg	Ser				
		290				295					300								
Glu	Cys	Arg	Asp	Leu	Val	Val	Pro	Gly	Ser	Lys	Pro	Ser	Gly	Asn	Asp				
		305			310					315				320					
Ser	Cys	Glu	Leu	Arg	Asn	Leu	Lys	Ser	Val	Gln	Asn	Ser	His	Phe	Lys				
			325					330					335						
Glu	Pro	Leu	Val	Ser	Asp	Glu	Lys	Ser	Ser	Glu	Leu	Ile	Ile	Thr	Asp				
		340						345					350						
Ser	Ile	Thr	Leu	Lys	Asn	Lys	Thr	Glu	Ser	Ser	Leu	Leu	Ala	Lys	Leu				
		355					360					365							
Glu	Glu	Thr	Lys	Glu	Tyr	Gln	Glu	Pro	Glu	Val	Pro	Glu	Ser	Asn	Gln				
		370				375						380							
Lys	Gln	Trp	Gln	Ser	Lys	Arg	Lys	Ser	Glu	Cys	Ile	Asn	Gln	Asn	Pro				
		385			390					395				400					
Ala	Ala	Ser	Ser	Asn	His	Trp	Gln	Ile	Pro	Glu	Leu	Ala	Arg	Lys	Val				
			405					410					415						
Asn	Thr	Glu	Gln	Lys	His	Thr	Thr	Phe	Glu	Gln	Pro	Val	Phe	Ser	Val				
		420					425						430						
Ser	Lys	Gln	Ser	Pro	Pro	Ile	Ser	Thr	Ser	Lys	Trp	Phe	Asp	Pro	Lys				
		435				440						445							
Ser	Ile	Cys	Lys	Thr	Pro	Ser	Ser	Asn	Thr	Leu	Asp	Asp	Tyr	Met	Ser				
		450				455					460								
Cys	Phe	Arg	Thr	Pro	Val	Lys	Asn	Asp	Phe	Pro	Pro	Ala	Cys	Gln					
		465			470				475				480						
Leu	Ser	Thr	Pro	Tyr	Gly	Gln	Pro	Ala	Cys	Phe	Gln	Gln	Gln	Gln	His				
			485					490					495						
Gln	Ile	Leu	Ala	Thr	Pro	Leu	Gln	Asn	Leu	Gln	Val	Leu	Ala	Ser	Ser				
		500					505					510							

Ser Ala Asn Glu Cys Ile Ser Val Lys Gly Arg Ile Tyr Ser Ile Leu
 515 520 525
 Lys Gln Ile Gly Ser Gly Gly Ser Ser Lys Val Phe Gln Val Leu Asn
 530 535 540
 Glu Lys Lys Gln Ile Tyr Ala Ile Lys Tyr Val Asn Leu Glu Glu Ala
 545 550 555 560
 Asp Asn Gln Thr Leu Asp Ser Tyr Arg Asn Glu Ile Ala Tyr Leu Asn
 565 570 575
 Lys Leu Gln Gln His Ser Asp Lys Ile Ile Arg Leu Tyr Asp Tyr Glu
 580 585 590
 Ile Thr Asp Gln Tyr Ile Tyr Met Val Met Glu Cys Gly Asn Ile Asp
 595 600 605
 Leu Asn Ser Trp Leu Lys Lys Lys Ser Ile Asp Pro Trp Glu Arg
 610 615 620
 Lys Ser Tyr Trp Lys Asn Met Leu Glu Ala Val His Thr Ile His Gln
 625 630 635 640
 His Gly Ile Val His Ser Asp Leu Lys Pro Ala Asn Phe Leu Ile Val
 645 650 655
 Asp Gly Met Leu Lys Leu Ile Asp Phe Gly Ile Ala Asn Gln Met Gln
 660 665 670
 Pro Asp Thr Thr Ser Val Val Lys Asp Ser Gln Val Gly Thr Val Asn
 675 680 685
 Tyr Met Pro Pro Glu Ala Ile Lys Asp Met Ser Ser Arg Glu Asn
 690 695 700
 Gly Lys Ser Lys Ser Lys Ile Ser Pro Lys Ser Asp Val Trp Ser Leu
 705 710 715 720
 Gly Cys Ile Leu Tyr Tyr Met Thr Tyr Gly Lys Thr Pro Phe Gln Gln
 725 730 735
 Ile Ile Asn Gln Ile Ser Lys Leu His Ala Ile Ile Asp Pro Asn His
 740 745 750
 Glu Ile Glu Phe Pro Asp Ile Pro Glu Lys Asp Leu Gln Asp Val Leu
 755 760 765
 Lys Cys Cys Leu Lys Arg Asp Pro Lys Gln Arg Ile Ser Ile Pro Glu
 770 775 780
 Leu Leu Ala His Pro Tyr Val Gln Ile Gln Thr His Pro Val Asn Gln
 785 790 795 800
 Met Ala Lys Gly Thr Thr Glu Glu Met Lys Tyr Val Leu Gly Gln Leu
 805 810 815
 Val Gly Leu Asn Ser Pro Asn Ser Ile Leu Lys Ala Ala Lys Thr Leu
 820 825 830
 Tyr Glu His Tyr Ser Gly Gly Glu Ser His Asn Ser Ser Ser Ser Lys
 835 840 845
 Thr Phe Glu Lys Lys Arg Gly Lys Lys
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<210> 484
 <211> 2984
 <212> DNA
 <213> Homo sapiens

<400> 484
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 taatgaacaa agtgagagac attaaaaata agtttaaaaa tgaagacctt actgatgaac 180
 taagcttgaa taaaatttct gctgatacta cagataactc gggaactgtt aaccacaaatta 240
 tgatgatggc aaacaaccga gaggactggt tgagtttggt gctcaacta gagaaaaaca 300

gtgttccgct aagtgatgct cttttaaata aattgattgg tcgttacagt caagcaattg 360
 aagcgcttcc cccagataaa tatggccaaa atgagagttt tgctagaatt caagtggagt 420
 ttgctgaatt aaaagctatt caagagccag atgatgcacg tgactacttt caaatggcca 480
 gagcaactcg caagaaatgt gcttttgttc atatatcttt tgcaacaatt gaactggcac 540
 aaggtaatgt caaaaaaagt aaacaacttc ttcaaaaagc tgtagaacgt ggagcagtac 600
 cactagaaat gctggaaatt gccctgcgga atttaaacct ccaaaaaaag cagctgcttt 660
 cagaggagga aaagaagaat ttatcagcat ctacgggtatt aactggccaa gaactatttt 720
 ccggttcact tgggcatmta cagaatagga acaacagttg tgattccaga ggacagacta 780
 ctaagccag gtttttatat ggagagaaca tgccaccaca agatgcagaa ataggttacc 840
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 taaagttttg tggctaaaat gacactaaaa aaaaaaaaaa aaaa 2984

<210> 485
 <211> 725
 <212> PRT
 <213> Homo sapiens

<400> 485
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 Thr Val Asn Leu Glu Lys Ser Cys Val Ser Val Glu Trp Ala Glu Gly

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Asn	Pro	Glu	Leu	Leu	Gln	Leu	Leu	Pro	Leu	His	Pro	Lys	Asp	Leu
65					70					75			80	
Pro	Leu	Gln	Glu	Asn	Val	Thr	Ile	Gln	Lys	Gln	Lys	Arg	Arg	Val
				85					90				95	
Asn	Ser	Lys	Ile	Pro	Ala	Pro	Lys	Glu	Ser	Leu	Arg	Ser	Arg	Thr
			100					105				110		
Arg	Met	Ser	Thr	Val	Ser	Glu	Leu	Arg	Ile	Thr	Ala	Gln	Glu	Asn
			115				120					125		
Met	Glu	Val	Glu	Leu	Pro	Ala	Ala	Ala	Asn	Ser	Arg	Lys	Gln	Phe
	130					135					140			
Val	Pro	Pro	Ala	Pro	Thr	Arg	Pro	Ser	Cys	Pro	Ala	Val	Ala	Ile
145					150					155				160
Pro	Leu	Arg	Met	Val	Ser	Glu	Glu	Met	Glu	Glu	Gln	Val	His	Ile
				165					170				175	
Arg	Gly	Ser	Ser	Ser	Ala	Asn	Pro	Val	Asn	Ser	Val	Arg	Arg	Ser
			180					185				190		
Cys	Leu	Val	Lys	Glu	Val	Glu	Lys	Met	Lys	Asn	Lys	Arg	Glu	Lys
	195						200					205		
Lys	Ala	Gln	Asn	Ser	Glu	Met	Arg	Met	Lys	Arg	Ala	Gln	Glu	Tyr
	210					215					220			
Ser	Ser	Phe	Pro	Asn	Trp	Glu	Phe	Ala	Arg	Met	Ile	Lys	Glu	Phe
225					230						235			240
Ala	Thr	Leu	Glu	Cys	His	Pro	Leu	Thr	Met	Thr	Asp	Pro	Ile	Glu
				245					250				255	
His	Arg	Ile	Cys	Val	Cys	Val	Arg	Lys	Arg	Pro	Leu	Asn	Lys	Gln
			260					265				270		
Leu	Ala	Lys	Lys	Glu	Ile	Asp	Val	Ile	Ser	Ile	Pro	Ser	Lys	Cys
	275						280					285		
Leu	Leu	Val	His	Glu	Pro	Lys	Leu	Lys	Val	Asp	Leu	Thr	Lys	Tyr
	290					295					300			
Glu	Asn	Gln	Ala	Phe	Cys	Phe	Asp	Phe	Ala	Phe	Asp	Glu	Thr	Ala
305					310					315				320
Asn	Glu	Val	Val	Tyr	Arg	Phe	Thr	Ala	Arg	Pro	Leu	Val	Gln	Thr
				325					330				335	
Phe	Glu	Gly	Gly	Lys	Ala	Thr	Cys	Phe	Ala	Tyr	Gly	Gln	Thr	Gly
			340					345				350		
Gly	Lys	Thr	His	Thr	Met	Gly	Gly	Asp	Leu	Ser	Gly	Lys	Ala	Gln
	355					360					365			
Ala	Ser	Lys	Gly	Ile	Tyr	Ala	Met	Ala	Ser	Arg	Asp	Val	Phe	Leu
	370					375					380			
Lys	Asn	Gln	Pro	Cys	Tyr	Arg	Lys	Leu	Gly	Leu	Glu	Val	Tyr	Val
385					390					395				400
Phe	Phe	Glu	Ile	Tyr	Asn	Gly	Lys	Leu	Phe	Asp	Leu	Leu	Asn	Lys
				405					410				415	
Ala	Lys	Leu	Arg	Val	Leu	Glu	Asp	Gly	Lys	Gln	Gln	Val	Gln	Val
			420				425					430		
Gly	Leu	Gln	Glu	His	Leu	Val	Asn	Ser	Ala	Asp	Asp	Val	Ile	Lys
	435					440					445			
Leu	Asp	Met	Gly	Ser	Ala	Cys	Arg	Thr	Ser	Gly	Gln	Thr	Phe	Ala
	450					455					460			
Ser	Asn	Ser	Ser	Arg	Ser	His	Ala	Cys	Phe	Gln	Ile	Ile	Leu	Arg
465					470					475				480
Lys	Gly	Arg	Met	His	Gly	Lys	Phe	Ser	Leu	Val	Asp	Leu	Ala	Gly
				485					490				495	

Glu Arg Gly Ala Asp Thr Ser Ser Ala Asp Arg Gln Thr Arg Met Glu
 500 505 510
 Gly Ala Glu Ile Asn Lys Ser Leu Leu Ala Leu Lys Glu Cys Ile Arg
 515 520 525
 Ala Leu Gly Gln Asn Lys Ala His Thr Pro Phe Arg Glu Ser Lys Leu
 530 535 540
 Thr Gln Val Leu Arg Asp Ser Phe Ile Gly Glu Asn Ser Arg Thr Cys
 545 550 555 560
 Met Ile Ala Thr Ile Ser Pro Gly Ile Ser Ser Cys Glu Tyr Thr Leu
 565 570 575
 Asn Thr Leu Arg Tyr Ala Asp Arg Val Lys Glu Leu Ser Pro His Ser
 580 585 590
 Gly Pro Ser Gly Glu Gln Leu Ile Gln Met Glu Thr Glu Glu Met Glu
 595 600 605
 Ala Cys Ser Asn Gly Ala Leu Ile Pro Gly Asn Leu Ser Lys Glu Glu
 610 615 620
 Glu Glu Leu Ser Ser Gln Met Ser Ser Phe Asn Glu Ala Met Thr Gln
 625 630 635 640
 Ile Arg Glu Leu Glu Glu Lys Ala Met Glu Glu Leu Lys Glu Ile Ile
 645 650 655
 Gln Gln Gly Pro Asp Trp Leu Glu Leu Ser Glu Met Thr Glu Gln Pro
 660 665 670
 Asp Tyr Asp Leu Glu Thr Phe Val Asn Lys Ala Glu Ser Ala Leu Ala
 675 680 685
 Gln Gln Ala Lys His Phe Ser Ala Leu Arg Asp Val Ile Lys Ala Leu
 690 695 700
 Arg Leu Ala Met Gln Leu Glu Glu Gln Ala Ser Arg Gln Ile Ser Ser
 705 710 715 720
 Lys Lys Arg Pro Gln
 725

<210> 486

<211> 2825

<212> DNA

<213> Homo sapiens

<400> 486

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 aatgggtttaa ttcacagtgc caatgtaagg actgtgaact tggagaaatc ctgtgtttca 180
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<211> 566
<212> PRT
<213> Homo sapiens

<400> 487
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35 40 45
Leu Val Pro Val Ser Gly Trp Gln Glu Leu Glu Thr Ala Phe Leu Glu
50 55 60
His Lys Glu Gln Phe His Tyr Phe Ile Leu Ile Asn Cys Gly Ala Asn
65 70 75 80
Val Asp Leu Leu Asp Ile Leu Gln Pro Asp Glu Asp Thr Ile Phe Phe
85 90 95
Val Cys Asp Thr His Arg Pro Val Asn Val Val Asn Val Tyr Asn Asp
100 105 110
Thr Gln Ile Lys Leu Leu Ile Lys Gln Asp Asp Asp Leu Glu Val Pro
115 120 125
Ala Tyr Glu Asp Ile Phe Arg Asp Glu Glu Glu Asp Glu Glu His Ser
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Gly Asn Asp Ser Asp Gly Ser Glu Pro Ser Glu Lys Arg Thr Arg Leu
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Glu Glu Glu Ile Val Glu Gln Thr Met Arg Arg Arg Gln Arg Arg Glu

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<210> 489

<211> 219

<212> PRT

<213> Homo sapiens

<400> 489

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 35 40 45
 Ala Ala Ser Lys Glu Arg Ser Gly Val Ser Leu Ala Ala Leu Lys Lys
 50 55 60
 Ala Leu Ala Ala Ala Gly Tyr Asp Val Glu Lys Asn Asn Ser Arg Ile
 65 70 75 80
 Lys Leu Gly Leu Lys Ser Leu Val Ser Lys Gly Thr Leu Val Gln Thr
 85 90 95
 Lys Gly Thr Gly Ala Ser Gly Ser Phe Lys Leu Asn Lys Lys Ala Ala
 100 105 110
 Ser Gly Glu Ala Lys Pro Lys Ala Lys Lys Ala Gly Ala Ala Lys Ala

115 120 125
 Lys Lys Pro Ala Gly Ala Ala Lys Lys Pro Lys Lys Ala Thr Gly Ala
 130 135 140
 Ala Thr Pro Lys Lys Ser Ala Lys Lys Thr Pro Lys Lys Ala Lys Lys
 145 150 155 160
 Pro Ala Ala Ala Ala Gly Ala Lys Lys Ala Lys Ser Pro Lys Lys Ala
 165 170 175
 Lys Ala Ala Lys Pro Lys Lys Ala Pro Lys Ser Pro Ala Lys Ala Lys
 180 185 190
 Ala Val Lys Pro Lys Ala Ala Lys Pro Lys Thr Ala Lys Pro Lys Ala
 195 200 205
 Ala Lys Pro Lys Lys Ala Ala Lys Lys Lys
 210 215

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 <211> 785
 <212> DNA
 <213> Homo sapiens

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 <212> PRT
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<400> 491
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 35 40 45
 Ile Asn Asn Thr Phe Leu Pro Ser Gln Asn Asp Leu Arg Ile Cys Ser
 50 55 60
 Leu Asn Leu Pro Ser Glu Glu Ser Thr Arg Glu Ile Asn Asn Arg Asp
 65 70 75 80
 Asn Cys Ser Gly Lys Tyr Cys Phe Glu Ala Pro Thr Leu Ala Thr Leu
 85 90 95
 Asp Pro Pro His Thr Val His Ser Ala Pro Lys Glu Val Ala Val Ser
 100 105 110
 Lys Glu Gln Glu Glu Lys Ser Asp Ser Leu Val Lys Tyr Phe Ser Val

Glu Asn Ser Pro His Leu Ile Cys Ile Gly Ala Leu Lys Lys Leu Cys
 580 585 590
 Asn His Pro Cys Leu Leu Phe Asn Ser Ile Lys Glu Lys Glu Cys Ser
 595 600 605
 Ser Thr Cys Asp Lys Asn Glu Lys Ser Leu Tyr Lys Gly Leu Leu
 610 615 620
 Ser Val Phe Pro Ala Asp Tyr Asn Pro Leu Leu Phe Thr Glu Lys Glu
 625 630 635 640
 Ser Gly Lys Leu Gln Val Leu Ser Lys Leu Leu Ala Val Ile His Glu
 645 650 655
 Leu Arg Pro Thr Glu Lys Val Val Leu Val Ser Asn Tyr Thr Gln Thr
 660 665 670
 Leu Asn Ile Leu Gln Glu Val Cys Lys Arg His Gly Tyr Ala Tyr Thr
 675 680 685
 Arg Leu Asp Gly Gln Thr Pro Ile Ser Gln Arg Gln Gln Ile Val Asp
 690 695 700
 Gly Phe Asn Ser Gln His Ser Ser Phe Phe Ile Phe Leu Leu Ser Ser
 705 710 715 720
 Lys Ala Gly Gly Val Gly Leu Asn Leu Ile Gly Gly Ser His Leu Ile
 725 730 735
 Leu Tyr Asp Ile Asp Trp Asn Pro Ala Thr Asp Ile Gln Ala Met Ser
 740 745 750
 Arg Val Trp Arg Asp Gly Gln Lys Tyr Pro Val His Ile Tyr Arg Leu
 755 760 765
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 770 775 780
 Lys Gln Gly Leu Cys Gly Ala Val Val Asp Leu Thr Lys Thr Ser Glu
 785 790 795 800
 His Ile Gln Phe Ser Val Glu Glu Leu Lys Asn Leu Phe Thr Leu His
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 Glu Ser Ser Asp Cys Val Thr His Asp Leu Leu Asp Cys Glu Cys Thr
 820 825 830
 Gly Glu Glu Val His Thr Gly Asp Ser Leu Glu Lys Phe Ile Val Ser
 835 840 845
 Arg Asp Cys Gln Leu Gly Pro His His Gln Lys Ser Asn Ser Leu Lys
 850 855 860
 Pro Leu Ser Met Ser Gln Leu Lys Gln Trp Lys His Phe Ser Gly Asp
 865 870 875 880
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<210> 492
 <211> 3057
 <212> DNA
 <213> Homo sapiens

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<210> 493
<211> 209
<212> PRT
<213> Homo sapiens

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20           25           30
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35           40           45

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Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
 50 55 60
 Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val Pro
 65 70 75 80
 Pro Lys Gly Asp Lys Lys Gly Lys Lys Lys Asp Pro Asn Ala Pro Lys
 85 90 95
 Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu His Arg Pro Lys
 100 105 110
 Ile Lys Ser Glu His Pro Gly Leu Ser Ile Gly Asp Thr Ala Lys Lys
 115 120 125
 Leu Gly Glu Met Trp Ser Glu Gln Ser Ala Lys Asp Lys Gln Pro Tyr
 130 135 140
 Glu Gln Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
 145 150 155 160
 Ala Tyr Arg Ala Lys Gly Lys Ser Glu Ala Gly Lys Lys Gly Pro Gly
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 180 185 190
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 195 200 205
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<210> 494
 <211> 1277
 <212> DNA
 <213> Homo sapiens

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<210> 495
 <211> 874
 <212> PRT
 <213> Homo sapiens

<400> 495

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			20					25					30		
Thr	Arg	Glu	Asn	Gly	Glu	Pro	Asp	Ala	Phe	Asp	Glu	Leu	Phe	Asp	Ala
		35					40					45			
Asp	Gly	Asp	Gly	Glu	Ser	Tyr	Thr	Glu	Glu	Ala	Asp	Asp	Gly	Glu	Thr
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Gly	Glu	Thr	Arg	Asp	Glu	Lys	Glu	Asn	Leu	Ala	Thr	Leu	Phe	Gly	Asp
65					70					75				80	
Met	Glu	Asp	Leu	Thr	Asp	Glu	Glu	Glu	Val	Pro	Ala	Ser	Gln	Ser	Thr
				85					90					95	
Glu	Asn	Arg	Val	Leu	Pro	Ala	Pro	Ala	Pro	Arg	Arg	Glu	Lys	Thr	Asn
			100					105					110		
Glu	Glu	Leu	Gln	Glu	Glu	Leu	Arg	Asn	Leu	Gln	Glu	Gln	Met	Lys	Ala
		115					120					125			
Leu	Gln	Glu	Gln	Leu	Lys	Val	Thr	Thr	Ile	Lys	Gln	Thr	Ala	Ser	Pro
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Glu	Arg	Arg	Val	Gln	Arg	Ile	Gln	Glu	Ser	Thr	Cys	Phe	Ser	Ala	Glu
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Leu	Asp	Val	Pro	Ala	Leu	Pro	Arg	Thr	Lys	Arg	Val	Ala	Arg	Thr	Pro
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Lys	Ala	Ser	Pro	Pro	Asp	Pro	Lys	Ser	Ser	Ser	Ser	Arg	Met	Thr	Ser
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Ile	Thr	Arg	Gly	Gln	Ile	Val	Gly	Thr	Pro	Gly	Ser	Ser	Gly	Glu	Thr
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Pro	Arg	Val	Ser	Ser	Thr	Glu	Met	Asn	Lys	Lys	Met	Thr	Gly	Arg	Lys
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Leu	Ile	Arg	Leu	Ser	Gln	Ile	Lys	Glu	Lys	Met	Ala	Arg	Glu	Lys	Leu
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Pro	Gln	Ser	Val	Asn	Ser	Gly	Lys	Thr	Phe	Ser	Ile	Trp	Lys	Leu	Asn
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Gln	Thr	Val	Asn	Leu	Arg	Asp	Cys	Glu	Tyr	Cys	Gln	Tyr	His	Val	Gln
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Glu Arg Tyr Phe Glu Pro Leu Val Lys Lys Glu Gln Met Glu Glu Lys		750
	755	760
Met Arg Asn Ile Arg Glu Val Lys Cys Arg Val Val Thr Cys Lys Thr		765
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Cys Ala Tyr Thr His Phe Lys Leu Leu Glu Thr Cys Val Ser Glu Gln		780
785	790	795
His Glu Tyr His Trp His Asp Gly Val Lys Arg Phe Phe Lys Cys Pro		800
	805	810
Cys Gly Asn Arg Ser Ile Ser Leu Asp Arg Leu Pro Asn Lys His Cys		815
	820	825
Ser Asn Cys Gly Leu Tyr Lys Trp Glu Arg Asp Gly Met Leu Lys Glu		830
	835	840
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Gln	Thr	Leu	Gly	Thr	Glu	Thr	Tyr	Arg	Pro	Ser	Ser	Ala	Ser	Gln	Cys
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Val	Ala	Gly	Ile	Ala	Cys	Ala	Glu	Ile	Pro	Val	Asn	Gln	Trp	Pro	Glu
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Tyr Leu Val Pro Ile Leu Thr Gln Thr Leu Thr Lys Gln Asp Glu Asn		
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Asp Asp Asp Asp Asp Trp Asn Pro Cys Lys Ala Ala Gly Val Cys Leu		
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Met Leu Leu Ala Thr Cys Cys Glu Asp Asp Ile Val Pro His Val Leu		
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Pro Phe Ile Lys Glu His Ile Lys Asn Pro Asp Trp Arg Tyr Arg Asp		
370	375	380
Ala Ala Val Met Ala Phe Gly Cys Ile Leu Glu Gly Pro Glu Pro Ser		
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Gln Leu Lys Pro Leu Val Ile Gln Ala Met Pro Thr Leu Ile Glu Leu		
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Tyr Glu Ser Leu Met Glu Ile Val Lys Asn Ser Ala Lys Asp Cys Tyr		
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Val Leu Gln Met Glu Ser His Ile Gln Ser Thr Ser Asp Arg Ile Gln		
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Asp	Gln	Val	Phe	Lys	Pro	Leu	Asp	Pro	Gly	Ser	Pro	Gln	Leu	Pro	Glu
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Gly	Phe	Ser	Pro	Leu	Leu	Pro	Val	Gln	Thr	Ile	Lys	Glu	Glu	Glu	Ile

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 Pro Lys Lys Ser Tyr Ser Gly Leu Arg Ser Pro Thr Arg Cys Val Ser
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 Pro Gln Arg Leu Leu Ser Ser Glu Pro Leu Asp Leu Ile Ser Val Pro
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 Phe Gly Asn Ser Ser Pro Ser Asp Ile Asp Val Pro Lys Pro Gly Ser
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<400> 501

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Thr	Arg	Leu	Trp	Asn	Lys	Tyr	Met	Ser	Asn	Thr	Phe	Glu	Pro	Leu	Asn
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Val	Gly	Arg	Phe	Ala	Pro	Gln	Phe	Ser	Gly	Tyr	Gln	Gln	Gln	Asp	Cys
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Gln	Glu	Leu	Leu	Ala	Phe	Leu	Leu	Asp	Gly	Leu	His	Glu	Asp	Leu	Asn
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Pro	Asp	Lys	Val	Val	Ala	Glu	Glu	Ala	Trp	Glu	Asn	His	Leu	Lys	Arg
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Cys	Tyr	Leu	Thr	Leu	Pro	Leu	Pro	Met	Lys	Lys	Glu	Arg	Thr	Leu	Glu
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Val Val Val Pro Lys Ile Gly Asn Ile Leu Asp Leu Cys Thr Ala Leu
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Lys Phe Arg His Ser Ser Tyr Thr His His Thr Gly Ser Ser Leu Phe
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Gly Gln Pro Phe Leu Met Ala Val Pro Arg Asn Asn Thr Glu Asp Lys
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Ile Arg Phe Asp Asp Arg Gln Leu Arg Leu Asp Glu Arg Ser Phe Leu
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Ala Ala Glu Asp Phe Glu Lys His Glu Ser Val Glu Tyr Lys Pro Pro
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Lys Lys Pro Phe Val Lys Leu Lys Asp Cys Ile Glu Leu Phe Thr Thr
755 760 765
Lys Glu Lys Leu Gly Ala Glu Asp Pro Trp Tyr Cys Pro Asn Cys Lys
770 775 780
Glu His Gln Gln Ala Thr Lys Lys Leu Asp Leu Trp Ser Leu Pro Pro
785 790 795 800
Val Leu Val Val His Leu Lys Arg Phe Ser Tyr Ser Arg Tyr Met Arg
805 810 815
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820 825 830
Ser Glu Phe Leu Ile Asn Pro Asn Ala Gly Pro Cys Arg Tyr Asn Leu
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Ile Ala Val Ser Asn His Tyr Gly Gly Met Gly Gly His Tyr Thr
850 855 860
Ala Phe Ala Lys Asn Lys Asp Asp Gly Lys Trp Tyr Tyr Phe Asp Asp
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          50           55           60
Asn Arg Pro Leu Lys Gly Arg Ile Asn Leu Val Leu Ser Arg Glu Leu
          65           70           75           80
Lys Glu Pro Pro Gln Gly Ala His Phe Leu Ser Arg Ser Leu Asp Asp
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Ala Leu Lys Leu Thr Glu Gln Pro Glu Leu Ala Asn Lys Val Asp Met
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<210> 507
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 507
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1 5 10 15
 Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Gly Arg Arg Ala
 20 25 30
 Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr
 35 40 45
 Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser
 50 55 60
 Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn
 65 70 75 80
 Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys Lys Ile
 85 90 95
 Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn
 100 105

<210> 508
 <211> 1103
 <212> DNA
 <213> Homo sapiens

<400> 508
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 gctcctgcga gtggcactgc tgctcctgct cctggtagcc gctggccggc gcgcagcagg 180
 agcgtccgtg gccactgaac tgcgtgccca gtgctgcag accctgcagg gaattcaccc 240
 caagaacatc caaagtgtga acgtgaagtc ccccggaacc cactgcgccc aaaccgaagt 300
 catagccaca ctcaagaatg ggcggaagc ttgcctcaat cctgcatccc ccatagttaa 360
 gaaaatcatc gaaaagatgc tgaacagtga caaatccaac tgaccagaag ggaggaggaa 420
 gctcaactggt ggctgttctt gaaggaggcc ctgcccttat aggaacagaa gaggaaagag 480
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 agtcttctat ttatttattt attcattagt ttgaagatt ctatgttaat atttaggtg 600
 taaaataatt aagggtatga ttaactctac ctgcacactg tctattata ttcatcttt 660
 ttgaaatgtc aaccccaagt tagttcaatc tggattcata ttaatttga aggtagaatg 720
 tttcaaatg tttctccagtc attatgttaa ttttctgag gagcctgcaa catgccagcc 780
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 aatgatttca cagtgtgttg tcaacatttc tcatgttgaa actttaagaa ctaaaatggt 960
 ctaaatatcc cttggacatt ttatgtcttt cttgtaaggc atactgcctt gtttaatggt 1020
 agttttacag tgtttctggc ttagaacaaa ggggcttaat tattgatgtt ttcatagaga 1080
 atataaaaat aaagcactta tag 1103

<210> 509
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 509
 Met Ala Arg Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu
 1 5 10 15
 Arg Val Ala Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala
 20 25 30
 Ala Gly Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr
 35 40 45
 Leu Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser
 50 55 60
 Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn
 65 70 75 80

Gly Gln Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile
 85 90 95
 Ile Glu Lys Met Leu Lys Asn Gly Lys Ser Asn
 100 105

<210> 510
 <211> 1110
 <212> DNA
 <213> Homo sapiens

<400> 510
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 gcttgctgag ccccatggcc cgcgcacgc tctccgccc cccagcaat ccccggtccc 120
 tgcgggtggc gctgctgctc ctgctcctgg tggccgccag ccggcgcgca gcaggagcgc 180
 ccttgccac tgaactgcgc tgccagtgc tgcagaccct gcagggaatt cactcaaga 240
 acatccaaag tgtgaagggtg aagtccccg gacccactg cgcccaaacc gaagtcatag 300
 ccacactcaa gaatgggagc aaagcttgct tcaacccgc atcgcccatg gtaagaaaa 360
 tcacgaaaa gatgctgaaa aatggcaaat ccaactgacc agaaggagg aggaagctta 420
 ttggtggctg ttctgaagg aggcctgccc ttacaggaac agaaggagg agagagacac 480
 agctgcagag gccacctggc ttgcgcctaa tgtgtttgag catacttagg agaagtcttc 540
 tatttattta tttatttatt tttgtttg ttttagaaga ttctatgtta atattttatg 600
 tgtaaaaataa gggtatgatt gaatctactt gcacactctc ccattatatt tattgtttat 660
 tttagggtcaa acccaagtta gttcaatcct gattcatatt taatttgaag atagaagggt 720
 tgcagatatt ctctagtcac ttgttaatat ttcttcgtga tgacatatca catgtcagcc 780
 actgtgatag aggtgagga atccaagaaa atggccagta agatcaatgt gacggcagg 840
 aaatgtatgt gtgtctattt tgtaactgta aagatgaatg tcagttgtta tttattgaaa 900
 tgatttcaca gtgtgtggtc aacatttttc atgttgaagc ttttaagaact aaaatgttct 960
 aaatatccct tggcatttta tgtctttctt gtaagatact gccttggtta atgttaatta 1020
 tgcagtgttt cctctgtgt tagagcagag aggtttcgat atttattgat gttttcaca 1080
 agaacaggaa aataaaatat ttaaaaatat 1110

<210> 511
 <211> 99
 <212> PRT
 <213> Homo sapiens

<400> 511
 Met Thr Ser Lys Leu Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser
 1 5 10 15
 Ala Ala Leu Cys Glu Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu
 20 25 30
 Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
 35 40 45
 Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr
 50 55 60
 Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro
 65 70 75 80
 Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys Phe Leu Lys Arg Ala
 85 90 95
 Glu Asn Ser

<210> 512
 <211> 1666
 <212> DNA

<213> Homo sapiens

<400> 512

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tggtctctctt ggcagccttc ctgatttctg cagctctgtg tgaaggtgca gttttgccaa 180
ggagtgtctaa agaacttaga tgtcagtgca taaagacata ctccaaacct ttccacccca 240
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ttgtaaagct ttctgatgga agagagctct gtctggacc cagggaanaac tgggtgcaga 360
gggttgtgga gaagtttttg aagagggctg agaattcata aaaaaattca ttctctgtgg 420
tatccaagaa tcagtgaaga tgccagtga aactcaagca aatctacttc aacacttcat 480
gtatttgtgt ggtctgttgt aggggttgcca gatgcaatac aagattcctg gttaaatttg 540
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atgtgctctc caaatttttt ttactgtttc tgattgtatg gaaatataaa agtaaatatg 1620
aaacatttaa aatataattt gttgtcaaaag taaaaaaaaa aaaaaa 1666
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<210> 513

<211> 106

<212> PRT

<213> Homo sapiens

<400> 513

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Met Ala His Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu
 1           5           10          15
Arg Val Ala Leu Leu Leu Leu Val Gly Ser Arg Arg Ala Ala
      20           25           30
Gly Ala Ser Val Val Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu
      35           40           45
Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Asn Val Arg Ser Pro
      50           55           60
Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly
      65           70           75           80
Lys Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Gln Lys Ile Ile
      85           90           95
Glu Lys Ile Leu Asn Lys Gly Ser Thr Asn
      100          105
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<210> 514

<211> 1064

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (27)...(27)

<223> N=A, T, G, or C

<400> 514

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tctgcggtt ggcgctgctg ctctgctcc tgggtggcag cggcgcgca gcaggagcgt 180
ccgtgggtcac tgaactgcgc tgccagtgc tgcagacact gcagggaatt cacctcaaga 240
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tcacgaaaa gatactgaac aaggggagca ccaactgaca ggagagaagt aagaagctta 420
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gccttgttta atgtccattc tgcagcggtt ctctttccct tggaaaagag aatttatcat 1020
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<210> 515

<211> 99

<212> PRT

<213> Homo sapiens

<400> 515

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Met Lys Val Ser Ala Ala Leu Leu Cys Leu Leu Leu Ile Ala Ala Thr
 1             5             10             15
Phe Ile Pro Gln Gly Leu Ala Gln Pro Asp Ala Ile Asn Ala Pro Val
 20             25             30
Thr Cys Cys Tyr Asn Phe Thr Asn Arg Lys Ile Ser Val Gln Arg Leu
 35             40             45
Ala Ser Tyr Arg Arg Ile Thr Ser Ser Lys Cys Pro Lys Glu Ala Val
 50             55             60
Ile Phe Lys Thr Ile Val Ala Lys Glu Ile Cys Ala Asp Pro Lys Gln
 65             70             75             80
Lys Trp Val Gln Asp Ser Met Asp His Leu Asp Lys Gln Thr Gln Thr
 85             90             95
Pro Lys Thr
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<210> 516

<211> 757

<212> DNA

<213> Homo sapiens

<400> 516

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ggaaccgaga ggctgagact aaccagaaa catccaattc tcaaactgaa gctgcgactc 60
tcgcctccag catgaaagtc tctgccgcc ttctgtgcct gctgtccta gcagccacct 120
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tcattcccca agggctcgct cagccagatg caatcaatgc cccagtcacc tgctgttata 180
 acttcaccaa taggaagatc tcagtgacaga ggctcgcgag ctatagaaga atcaccagca 240
 gcaagtgtcc caaagaagct gtgatcttca agaccattgt ggccaaggag atctgtgctg 300
 accccaagca gaagtgggtt caggattcca tggaccacct ggacaagcaa acccaaaactc 360
 cgaagacttg aacactcact ccacaaccca agaactctgca gctaacttat tttcccctag 420
 ctttccccag acacctgtt ttattttatt ataatagaatt ttgtttgttg atgtgaaaca 480
 ttatgcctta agtaatgtta attcttattt aagttattga tgttttaagt ttatctttca 540
 tgggtactagt gttttttaga tacagagact tggggaaatt gcttttctc ttgaaccaca 600
 gttctacccc tgggatgttt tgagggtctt tgcaagaatc attaatataca agaatttttt 660
 ttaacattcc aatgcattgc taaaatatta ttgtggaaat gaatattttg taactattac 720
 accaaataaa tatatttttg tacaaaaaaa aaaaaaa 757

<210> 517
 <211> 415
 <212> PRT
 <213> Homo sapiens

<400> 517
 Met Glu Leu Arg Lys Tyr Gly Pro Gly Arg Leu Ala Gly Thr Val Ile
 1 5 10 15
 Gly Gly Ala Ala Gln Ser Lys Ser Gln Thr Lys Ser Asp Ser Ile Thr
 20 25 30
 Lys Glu Phe Leu Pro Gly Leu Tyr Thr Ala Pro Ser Ser Pro Phe Pro
 35 40 45
 Pro Ser Gln Val Ser Asp His Gln Val Leu Asn Asp Ala Glu Val Ala
 50 55 60
 Ala Leu Leu Glu Asn Phe Ser Ser Tyr Asp Tyr Gly Glu Asn Glu
 65 70 75 80
 Ser Asp Ser Cys Cys Thr Ser Pro Pro Cys Pro Gln Asp Phe Ser Leu
 85 90 95
 Ile Asn Phe Asp Arg Ala Phe Leu Pro Ala Leu Tyr Ser Leu Leu Phe
 100 105 110
 Leu Leu Gly Leu Leu Gly Asn Gly Ala Val Ala Val Leu Leu Ser
 115 120 125
 Arg Arg Thr Ala Leu Ser Ser Thr Asp Thr Phe Leu Leu His Leu Ala
 130 135 140
 Val Ala Asp Thr Leu Leu Val Leu Thr Leu Pro Leu Trp Ala Val Asp
 145 150 155 160
 Ala Ala Val Gln Trp Val Phe Gly Ser Gly Leu Cys Lys Val Ala Gly
 165 170 175
 Ala Leu Phe Asn Ile Asn Phe Tyr Ala Gly Ala Leu Leu Leu Ala Cys
 180 185 190
 Ile Ser Phe Asp Arg Tyr Leu Asn Ile Val His Ala Thr Gln Leu Tyr
 195 200 205
 Arg Arg Gly Pro Pro Ala Arg Val Thr Leu Thr Cys Leu Ala Val Trp
 210 215 220
 Gly Leu Cys Leu Leu Phe Ala Leu Pro Asp Phe Ile Phe Leu Ser Ala
 225 230 235 240
 His His Asp Glu Arg Leu Asn Ala Thr His Cys Gln Tyr Asn Phe Pro
 245 250 255
 Gln Val Gly Arg Thr Ala Leu Arg Val Leu Gln Leu Val Ala Gly Phe
 260 265 270
 Leu Leu Pro Leu Leu Val Met Ala Tyr Cys Tyr Ala His Ile Leu Ala
 275 280 285
 Val Leu Leu Val Ser Arg Gly Gln Arg Arg Leu Arg Ala Met Arg Leu
 290 295 300
 Val Val Val Val Val Val Ala Phe Ala Leu Cys Trp Thr Pro Tyr His

305 310 315 320
 Leu Val Val Leu Val Asp Ile Leu Met Asp Leu Gly Ala Leu Ala Arg
 325 330 335
 Asn Cys Gly Arg Glu Ser Arg Val Asp Ala Lys Ser Val Thr Ser Gly
 340 345 350
 Leu Gly Tyr Met His Cys Cys Leu Asn Pro Leu Leu Tyr Ala Phe Val
 355 360 365
 Gly Val Lys Phe Arg Glu Arg Met Trp Met Leu Leu Leu Arg Leu Gly
 370 375 380
 Cys Pro Asn Gln Arg Gly Leu Gln Arg Gln Pro Ser Ser Ser Arg Arg
 385 390 395 400
 Asp Ser Ser Trp Ser Glu Thr Ser Glu Ala Ser Tyr Ser Gly Leu
 405 410 415

<210> 518
 <211> 1703
 <212> DNA
 <213> Homo sapiens

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 <212> PRT
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 <211> 499
 <212> PRT
 <213> Homo sapiens

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Lys Glu Ala Ala Gly Pro Ala Pro Ser Pro Met Arg Ala Ala Asn Arg
 35          40          45
Ser His Ser Ala Gly Arg Thr Pro Gly Arg Thr Pro Gly Lys Ser Ser
 50          55          60
Ser Lys Val Gln Thr Thr Pro Ser Lys Pro Gly Gly Asp Arg Tyr Ile
 65          70          75          80
Pro His Arg Ser Ala Ala Gln Met Glu Val Ala Ser Phe Leu Leu Ser
 85          90          95
Lys Glu Asn Gln Pro Glu Asn Ser Gln Thr Pro Thr Lys Lys Glu His
 100          105          110
Gln Lys Ala Trp Ala Leu Asn Leu Asn Gly Phe Asp Val Glu Glu Ala
 115          120          125
Lys Ile Leu Arg Leu Ser Gly Lys Pro Gln Asn Ala Pro Glu Gly Tyr
 130          135          140
Gln Asn Arg Leu Lys Val Leu Tyr Ser Gln Lys Ala Thr Pro Gly Ser
 145          150          155          160
Ser Arg Lys Thr Cys Arg Tyr Ile Pro Ser Leu Pro Asp Arg Ile Leu
 165          170          175
Asp Ala Pro Glu Ile Arg Asn Asp Tyr Tyr Leu Asn Leu Val Asp Trp
 180          185          190
Ser Ser Gly Asn Val Leu Ala Val Ala Leu Asp Asn Ser Val Tyr Leu
 195          200          205
Trp Ser Ala Ser Ser Gly Asp Ile Leu Gln Leu Leu Gln Met Glu Gln
 210          215          220
Pro Gly Glu Tyr Ile Ser Ser Val Ala Trp Ile Lys Glu Gly Asn Tyr
 225          230          235          240
Leu Ala Val Gly Thr Ser Ser Ala Glu Val Gln Leu Trp Asp Val Gln
 245          250          255
Gln Gln Lys Arg Leu Arg Asn Met Thr Ser His Ser Ala Arg Val Gly
 260          265          270
Ser Leu Ser Trp Asn Ser Tyr Ile Leu Ser Ser Gly Ser Arg Ser Gly
 275          280          285
His Ile His His His Asp Val Arg Val Ala Glu His His Val Ala Thr
 290          295          300
Leu Ser Gly His Ser Gln Glu Val Cys Gly Leu Arg Trp Ala Pro Asp
 305          310          315          320
Gly Arg His Leu Ala Ser Gly Gly Asn Asp Asn Leu Val Asn Val Trp

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Pro Ser Ala	Pro Gly Glu Gly Gly Trp Val	Pro Leu Gln Thr Phe Thr			
	340		345		350
Gln His Gln	Gly Ala Val Lys Ala Val Ala Trp Cys	Pro Trp Gln Ser			
	355		360		365
Asn Val Leu	Ala Thr Gly Gly Gly Thr Ser Asp Arg	His Ile Arg Ile			
	370		375		380
Trp Asn Val	Cys Ser Gly Ala Cys Leu Ser Ala Val Asp	Ala His Ser			
	385		390		395
Gln Val Cys	Ser Ile Leu Trp Ser Pro His Tyr Lys	Glu Leu Ile Ser			
	405		410		415
Gly His Gly	Phe Ala Gln Asn Gln Leu Val Ile Trp Lys	Tyr Pro Thr			
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Met Ala Lys	Val Ala Glu Leu Lys Gly His Thr Ser Arg	Val Leu Ser			
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Leu Thr Met	Ser Pro Asp Gly Ala Thr Val Ala Ser	Ala Ala Ala Asp			
	450		455		460
Glu Thr Leu	Arg Leu Trp Arg Cys Phe Glu Leu Asp	Pro Ala Arg Arg			
	465		470		475
Arg Glu Arg	Glu Lys Ala Ser Ala Ala Lys Ser Ser	Leu Ile His Gln			
	485		490		495
Gly Ile Arg					

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